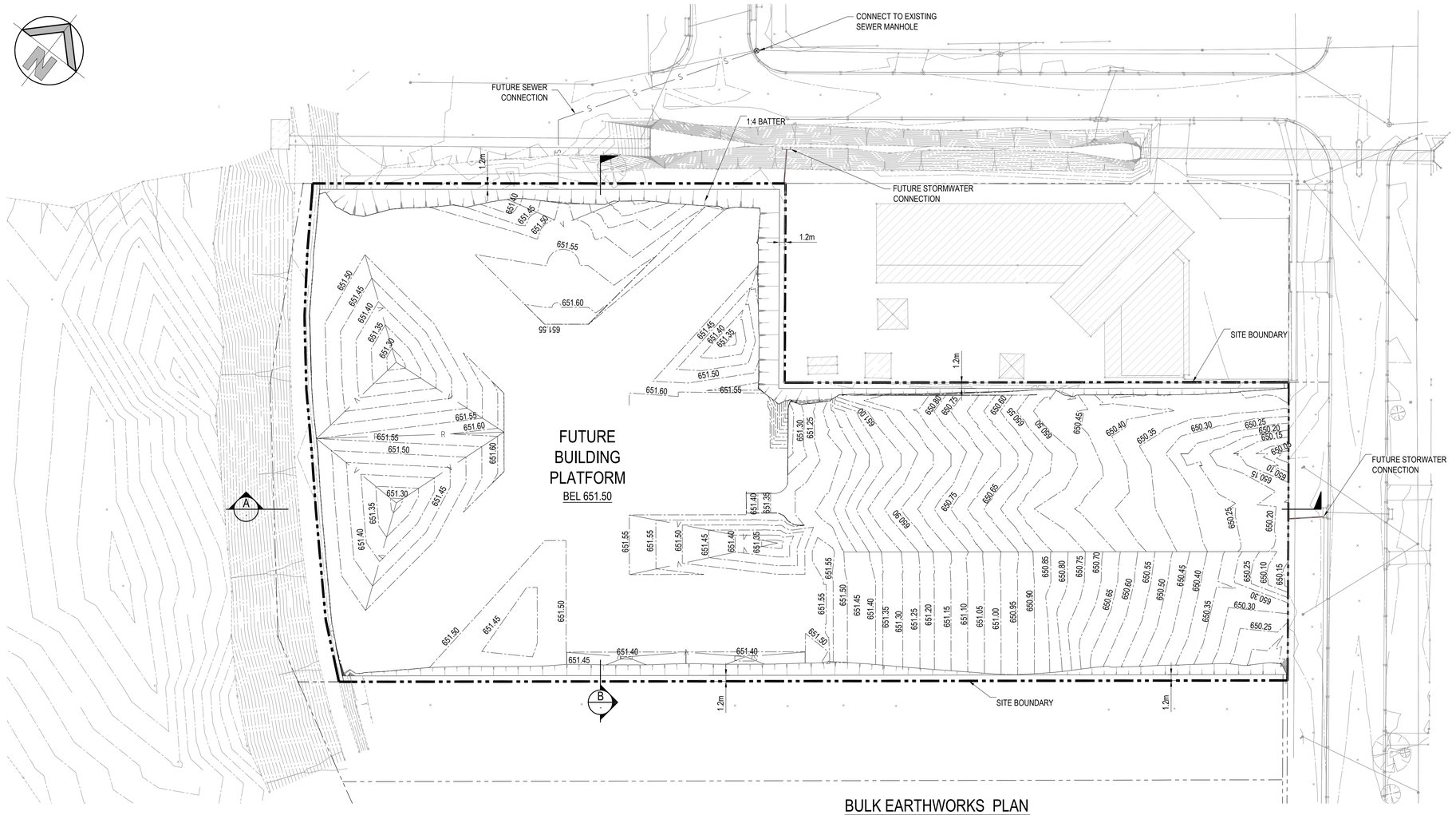


BULK EARTHWORKS PLAN

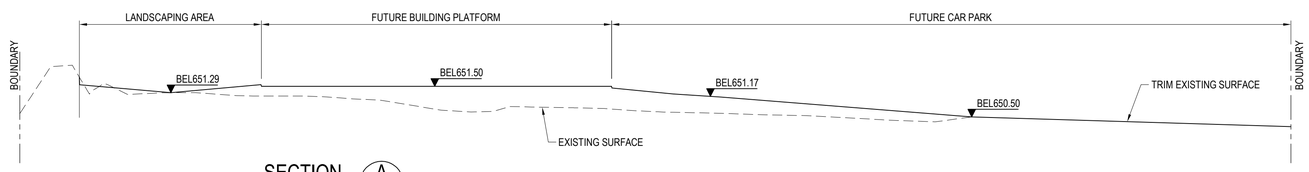
SCALE 1:500

LEGEND

- SITE BOUNDARY
- EXISTING BOUNDARY
- R — PROPOSED RIDGE LINE
- V — PROPOSED VALLEY LINE
- PROPOSED BATTER LINE
- 4.60 — CONTOURS BE
- BEL 4.520 — PROPOSED SPOT LEVEL BE
- S — S — PROPOSED SEWER LINE
- PROPOSED STORMWATER PIPE

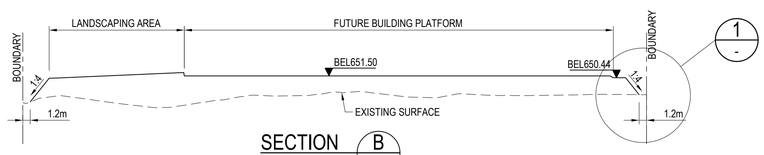
NOTE:

- EARTHWORKS TO BE PLACED TO ENGINEER'S SPECIFICATION AND SUITABLE FOR FUTURE BUILDING USE
- FINISHED EARTHWORKS TO BE TOPSOILED AND GRASS SEEDED.



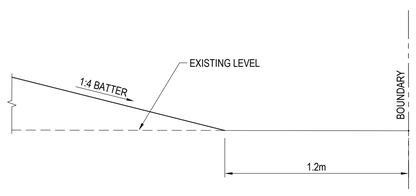
SECTION A

SCALE: 1:500H; 1:100V



SECTION B

SCALE: 1:500H; 1:100V



DETAIL 1

SCALE: 1:20

0 2 4 6 8 10m
2 1
SCALE 1:100

0 10 20 30 40 50m
10 8 6 4 2
SCALE 1:500

0 400 800 1200 1600 2000mm
400 200
SCALE 1:20

FOR DA ONLY

SURVEY INFORMATION
SURVEYED BY
LINKER SURVEYING PTY LTD
DATUM: (A.H.D.)
ORIGIN OF LEVELS: PM 11170, RL650.160

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA	GP	IA	05.11.2015
03	ISSUED FOR DA	GP	IA	23.10.2015
02	ISSUED FOR COUNCIL APPROVAL	GP	IA	16.10.2015
01	ISSUED FOR COUNCIL APPROVAL	AA	IA	08.10.2015

Client: OPAL AGED CARE

Architect: GROUP GSA

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henry&hymas

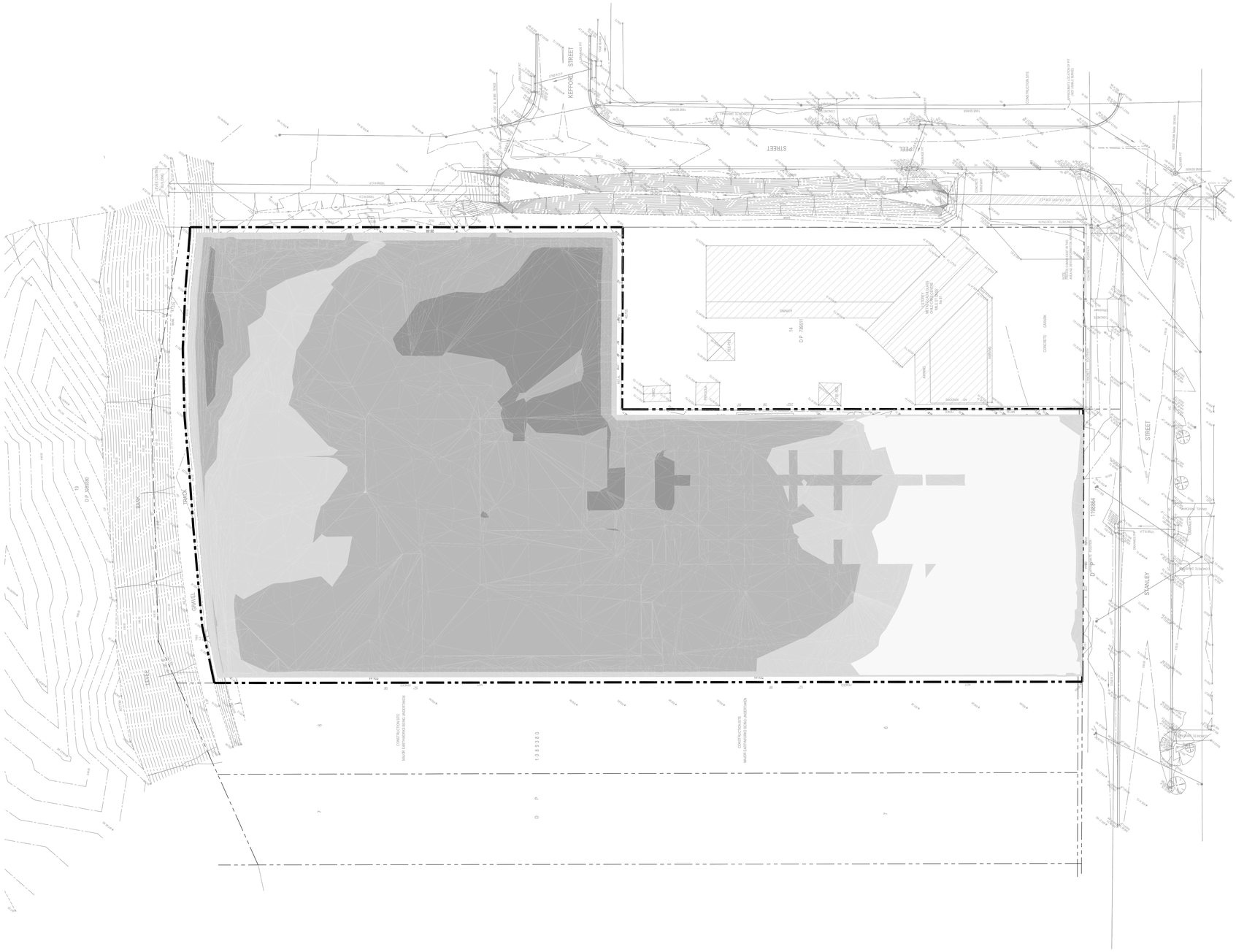
Project: OPAL AGED CARE DEVELOPMENT
LOTS 3,4,5 AND 6 DP1089380 STANLEY STREET BATHURST

Title: BULK EARTHWORKS PLAN
EARLY WORKS DEVELOPMENT APPLICATION

Drawn	Designed	Date
G.Pan	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	AS SHOWN @ A1

Drawing number: 15884_DA_BE01

Revision: 04



DEPTH RANGE

- 0 - 0.5m FILL
- 0.5 - 1.0m FILL
- 1.0 - 1.2m FILL
- TRIMMING ONLY

NOTE:

SOIL CONTAMINATION REMEDIATION TO BE UNDERTAKEN PRIOR TO SITE FILLING IF FOUND TO BE REQUIRED.

BULK EARTHWORKS DEPTHS

SCALE 1:500

0 10 20 30 40 50m

10 8 6 4 2

SCALE 1:500

FOR DA ONLY

SURVEY INFORMATION

SURVEYED BY
LINKER SURVEYING PTY LTD
DATUM: (A.H.D.)
ORIGIN OF LEVELS: PM 11170, RL650.160

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR DA	GP	IA	05.11.2015					
03	ISSUED FOR DA	GP	IA	23.10.2015					
02	ISSUED FOR COUNCIL APPROVAL	GP	IA	08.10.2015					
01	ISSUED FOR COUNCIL APPROVAL	AA	IA	08.10.2015					

Client
OPAL AGED CARE

Architect
GROUP GSA

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Project
OPAL AGED CARE DEVELOPMENT
LOTS 3,4,5 AND 6 DP1089380 STANLEY STREET BATHURST

Title
BULK EARTHWORKS DEPTHS
EARLY WORKS DEVELOPMENT APPLICATION

Drawn	Designed	Date
A. ALKATEB	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	1:500 @ A1

Drawing number 15884_DA_BE02

Revision 04

PROPOSED OPAL AGED CARE DEVELOPMENT
LOTS 2,3,4 AND 5 STANLEY STREET BATHURST NSW
CIVIL ENGINEERING WORKS

GENERAL NOTES:

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH BATHURST REGIONAL COUNCIL SPECIFICATIONS. CONTRACTOR TO OBTAIN AND RETAIN A COPY ON SITE DURING T HE COURSE OF THE WORKS.
2. ALL NEW WORKS ARE TO MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS, AND MARRY IN A 'WORKMANLIKE' MANNER.
3. THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL SERVICES WITH EACH RELEVANT AUTHORITY. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED BY THE CONTRACTOR OR THE RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY OR AS DETERMINED FROM SERVICE DIAGRAMS. HENRY AND HYMAS CONSULTING PTY. LTD. CANNOT GUARANTEE THE INFORMATION SHOWN NOR ACCEPT ANY RESPONSIBILITY FOR INACCURACIES OR INCOMPLETE DATA.
4. SERVICES & ACCESSES TO THE EXISTING PROPERTIES ARE TO BE MAINTAINED IN WORKING ORDER AT ALL TIMES DURING CONSTRUCTION.
5. ADJUST EXISTING SERVICE COVERS TO SUIT NEW FINISHED LEVELS TO RELEVANT AUTHORITY REQUIREMENTS WHERE NECESSARY.
6. REINSTATE AND STABILISE ALL DISTURBED LANDSCAPED AREAS.
7. MINIMUM GRADE OF SUBSOIL SHALL BE 0.5% (1:200) FALL TO OUTLETS.
8. ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS, EROSION AND SEDIMENTATION CONTROL PLAN AND BATHURST REGIONAL COUNCIL REQUIREMENTS WHERE APPLICABLE.
9. CONTRACTOR TO CHECK AND CONFIRM SITE DRAINAGE CONNECTIONS ACROSS THE VERGE PRIOR TO COMMENCEMENT OF SITE DRAINAGE WORKS.
10. PROPERTIES AFFECTED BY THE WORKS ARE TO BE NOTIFIED IN ADVANCE WHERE DISRUPTION TO EXISTING ACCESS IS LIKELY.

LOCALITY SKETCH

N.T.S.

DRAWING SCHEDULE

15884_DA_C000	COVER SHEET, DRAWING SCHEDULE, NOTES & LOCALITY SKETCH
15884_DA_C100	GENERAL ARRANGEMENT PLAN
15884_DA_C101	DETAIL PLAN 1 OF 2
15884_DA_C102	DETAIL PLAN 2 OF 2
15884_DA_C200	STORMWATER MISCELLANEOUS DETAILS & PIT LID SCHEDULE
15884_DA_C250	CATCHMENT PLAN
15884_DA_C500	PAVEMENT PLAN
15884_DA_SE01	SEDIMENT EROSION CONTROL PLAN
15884_DA_SE02	SEDIMENT & EROSION CONTROL TYPICAL SECTIONS & DETAILS

SITEWORKS NOTES

- DATUM A.H.D.
- ORIGIN OF LEVELS. REFER TO BENCH OR STATE SURVEY MARKS WHERE SHOWN ON PLAN.
- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK.
- ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE DIRECTIONS OF THE SUPERINTENDENT.
- EXISTING SERVICES UNLESS SHOWN ON SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS 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 SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS ACHIEVED.
- THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
- CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATION IS TO BE UNDERTAKEN OVER TELSTRA OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
- CONTRACTOR TO OBTAIN AUTHORITY APPROVALS WHERE APPLICABLE.
- MAKE SMOOTH TRANSITION TO EXISTING SURFACES AND MAKE GOOD.
- THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED LANDSCAPE, ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND MECHANICAL DRAWINGS AND SPECIFICATIONS OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED RELATING TO DEVELOPMENT AT THE SITE.
- TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MINIMUM OF 50mm IN BITUMINOUS PAVING.
- ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN 80Ø uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.
- GRADES TO PAVEMENTS TO BE AS IMPLIED BY RL'S ON PLAN . GRADE EVENLY BETWEEN NOMINATED RL'S. AREAS EXHIBITING PONDING GREATER THAN 5mm DEPTH WILL NOT BE ACCEPTED/ UNLESS IN A DESIGNATED SAG POINT.
- ALL COVERS AND GRATES ETC TO EXISTING SERVICE UTILITIES ARE TO BE ADJUSTED TO SUIT NEW FINISHED SURFACE LEVELS WHERE APPLICABLE

SURVEY NOTES

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY SURVEYOR SPECIFIED IN THE TITLE BLOCK.
THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. HENRY AND HYMAS PTY. LTD. DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.
SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT HENRY AND HYMAS PTY. LTD. THE FOLLOWING NOTES HAVE BEEN TAKEN DIRECTLY FROM ORIGINAL SURVEY DOCUMENTS.

ORIGIN OF LEVELS P.M. 3981 R.L. 11.53
DATUM AHD

COMPACTION REQUIREMENTS

1. PREPARATION FOR PAVEMENT:
   CLEAR SITE, STRIP TOP-SOIL, CUT AND FILL AND PREPARATIONS OF SUB-GRADE SHALL BE AS DESCRIBED IN " SUBGRADE PREPARATION".
2. SUB-GRADE SHALL BE COMPACTED TO 98% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289 5.1.1., TOP 300MM TO 100% SDD.
3. TESTING OF THE SUBGRADE AND PAVEMENT LAYERS SHALL BE CARRIED OUT BY APPROVED N.A.T.A. REGISTERED LABORATORY.

SUBGRADE PREPARATION - SITEWORKS.

1. THE EXISTING SURFACE IS TO BE STRIPPED OF ANY PAVEMENTS, TOPSOIL OR OBVIOUS UNSUITABLE MATERIAL.
2. EXCAVATE TO ACHIEVE SUBGRADE LEVELS WHERE NECESSARY.
3. UPON COMPLETION OF STRIPPING AND PRIOR TO PLACEMENT OF FILL THE ENTIRE SITE SHALL BE PROOF ROLLED WITH A MINIMUM OF 6 PASSES OF A VIBRATOR PADFOOT ROLLER OF NOT LESS THAN 9 TONNE MINIMUM DEAD WEIGHT. ANY SOFT OR HEAVING AREAS SHALL BE REMOVED TO THE SATISFACTION OF THE PROJECT MANAGER TO A MINIMUM DEPTH OF 500mm AND THEN BACKFILLED WITH APPROVED MATERIAL IN 200mm THICK LOOSE LAYERS COMPACTED TO 98% OF STANDARD MAX. DRY DENSITY AND TO WITHIN +/- 2% OF STANDARD OPTIMUM MOISTURE CONTENT. APPROVED BACKFIL MATERIAL MAY BE CRUSHED ROCK OR SANDY LOAM WITH A PLASTICITY INDEX LESS THAN 15%..
4. ENGINEERED FILL FOR REPLACEMENT OF SOFT OR HEAVING AREAS OR FOR BULK FILLING TO COMPRISE ESSENTIALLY OF GRANULAR MATERIALS (EG. EXCAVATED SHALE), WITH A PARTICLE SIZE NOT GREATER THAN 75mm DIAMETER. ENGINEERED FILL TO BE PLACED IN LAYERS NOT EXCEEDING 200mm LOOSE THICKNESS AND COMPACTED TO BETWEEN 98% AND 102% OF STANDARD MAXIMUM DRY DENSITY (SMDD) WITHIN ± 2% OF OPTIMUM MOISTURE CONTENT (OMC); AND UNDERTAKEN UNDER LEVEL 1 SUPERVISION OF A GEOTECHNICAL ENGINEER.
5. IMPORTED FILLING (IF REQUIRED) IS TO BE TO THE APPROVAL OF THE PROJECT MANAGER. THE CONTRACTOR IS TO NOMINATE THE SOURCE AND PROVIDE A SAMPLE FOR APPROVAL PRIOR TO IMPORTATION AND PLACEMENT ON SITE.
6. ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING.
   FREE FORM ORGANIC AND PERISHABLE MATTER
   MAXIMUM PARTICLE SIZE = 75mm
   MAXIMUM PLASTICITY INDEX = 15%

EXISTING SERVICES & FEATURES:

- THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL (IF REQUIRED) OF ALL EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA OR AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT.
- THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
- PRIOR TO COMMENCEMENT OF ANY WORKS THE CONTRACTOR SHALL GAIN APPROVAL OF HIS PROGRAM FOR THE RELOCATION/ CONSTRUCTION OF TEMPORARY SERVICES.
- CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN SUPPLY TO EXISTING BUILDING REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED, THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT.
- INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. CONTRACTOR TO GAIN APPROVAL FROM THE SUPERINTENDENT FOR TIME OF INTERRUPTION.
- EXISTING SERVICES, BUILDINGS, EXTERNAL STRUCTURES AND TREES SHOWN ON THESE DRAWINGS ARE EXISTING FEATURES PRIOR TO ANY DEMOLITION WORKS.
- EXISTING SERVICES UNLESS SHOWN ON SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETE A 'DIAL BEFORE YOU DIG' SEARCH AND TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
- ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN 80Ø uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.

BULK EARTHWORKS GENERAL NOTES

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM SURVEY AND AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE.

HENRY AND HYMAS PTY LTD CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS, ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN ARISING FROM ANY CAUSE WHATSOEVER.
CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION.
FOR COMMENCEMENT OF WORKS ON SITE, SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.

ALL SERVICES ARE TO BE LOCATED AND CUT OFF PRIOR TO THE COMMENCEMENT OF EXCAVATION AND FILLING OPERATIONS.

ALL TOP SOIL, ORGANIC MATTER AND FILL MATERIAL SHALL BE REMOVED FROM ALL AREAS UNDER BUILDING AND CARPARK LOCATIONS TO THE SATISFACTION OF THE PROJECT MANAGER. AREAS TO BE FULLY STRIPPED OF EXISTING FILL AND DARK BROWN BLACK UPPER ORGANIC ALLUVIUM.

PROOF ROLL AS PER "SUBGRADE PREPARATION" NOTES.

IMPORTED FILLING:
THE CONTRACTOR WILL IMPORT SUITABLE FILL FROM AN EXTERNAL SOURCE. EXCAVATION MATERIALS MEETING THE REQUIRED SPECIFICATION MAY BE USED AS FILL. THIS MAY INCLUDE RECYCLED MATERIALS IF THEY ARE SUITABLY BLENDED/CONDITIONED TO MEET MATERIALS SPECIFICATIONS.

NOTE:
SOIL CONTAMINATION REMEDIATION TO BE UNDERTAKEN PRIOR TO SITE FILLING IF FOUND TO BE REQUIRED.

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DEVELOPMENT APPLICATION	LC	IA	18.01.2016					

Client: OPAL AGED CARE

Architect: GROUP GSA

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Project: OPAL AGED CARE DEVELOPMENT
LOTS 2,3,4 AND 5 DP1089380 STANLEY STREET BATHURST

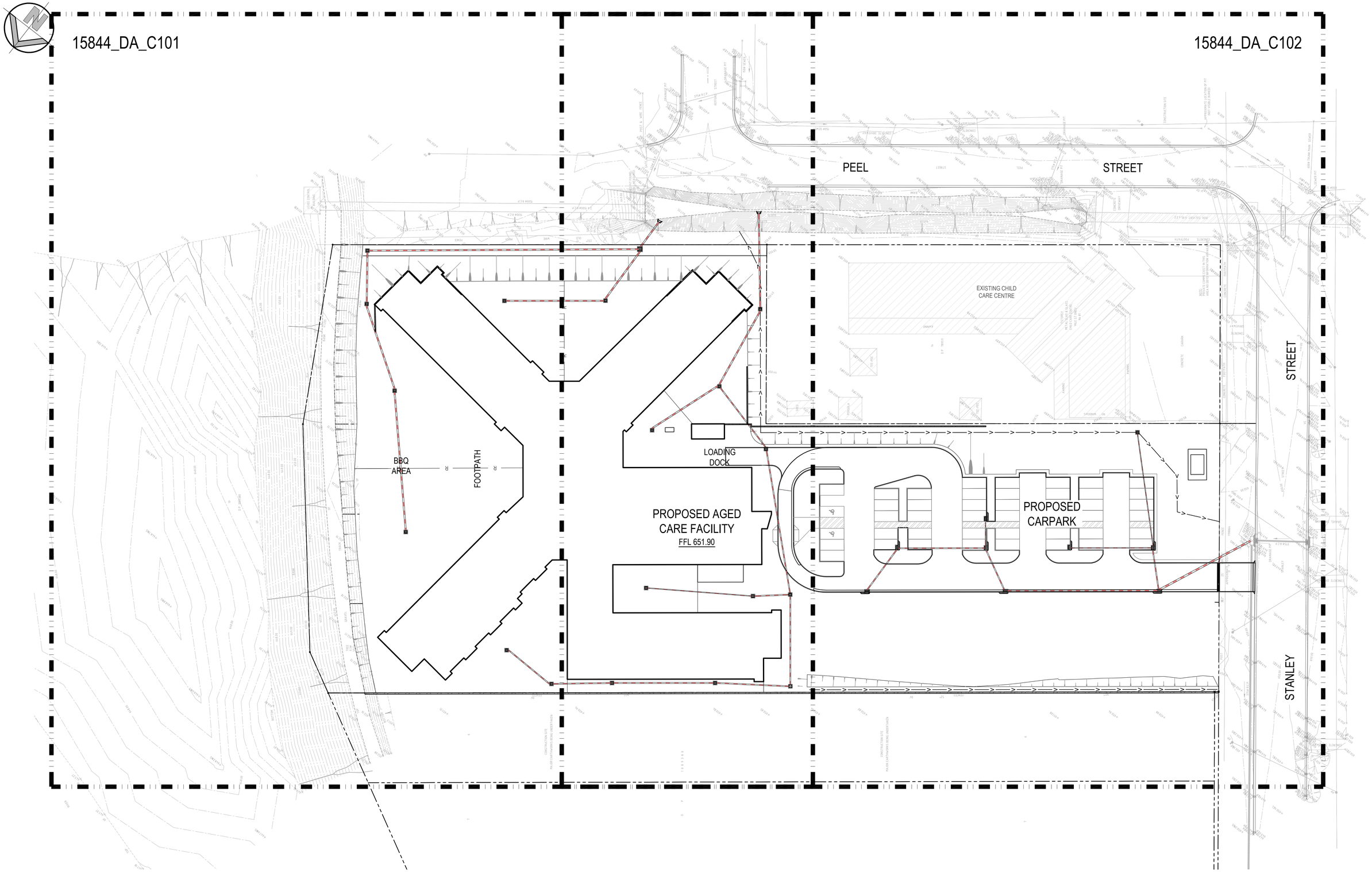
Title: COVER SHEET, DRAWING SCHEDULE,LOCALITY SKETCH
DEVELOPMENT APPLICATION

Drawn	Designed	Date
GPan	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	N.T.S @ A1

Drawing number: 15884_DA_C000

Revision: 01

20/01/2016 7:21:29 PM, iahmed, Uncontrolled Copy



DETAIL PLAN

SCALE 1:400 @ A1

0 8 16 24 32 40m

8 6 4 2

SCALE 1:400

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY
LINKER SURVEYING PTY LTD
DATUM: (A.H.D.)
ORIGIN OF LEVELS: PM 11170, RL650.160

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DEVELOPMENT APPLICATION	GP	IA	20.1.2015					

Client
OPAL AGED CARE

Architect
GROUP GSA

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Project
OPAL AGED CARE DEVELOPMENT
LOTS 2,3,4 AND 5 DP1089380 STANLEY STREET BATHURST

Title
GENERAL ARRANGEMENT PLAN

Drawn	Designed	Date
GPan	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	1:400 @ A1

Drawing number: 15884_DA_C100

Revision: 01

PROPOSED SEWER CONNECTION REFER INSET PLAN

PERIMETER FOOTPATH TO LANDSCAPE ARCHITECT'S DETAILS

OPEN CHANNEL VIA HEADWALL

SITE BOUNDARY

BATTER SLOPE

DROP EDGE BEAM

FUTURE LANDSCAPE DETAILS BY LANDSCAPE ARCHITECT

ROOF WATER DRAINAGE TO FUTURE DETAILS BY HYDRAULIC ENGINEER

PROPOSED AGED CARE FACILITY

FFL 651.90

EXISTING GRAVEL TRACK

PROPOSED GRASSED SWALE

PROPOSED BERM @ 3% FALL

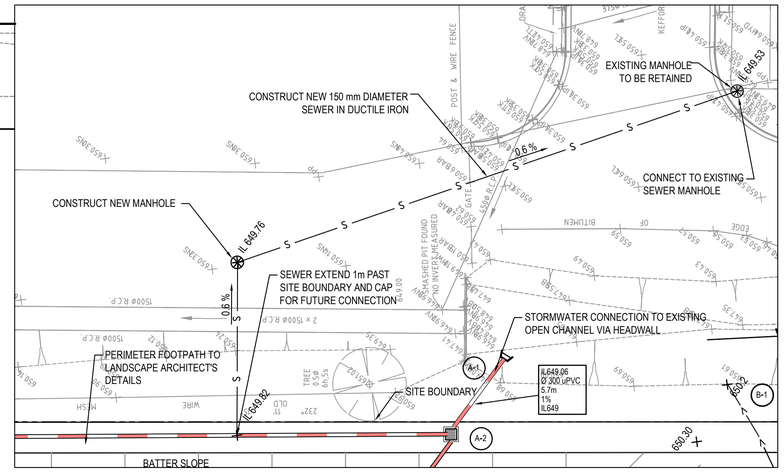
FOOTPATH TO ARCHITECT DETAILS

EXISTING RETAINING WALL

REFER 15884_DA_C102 FOR DRAWING CONTINUATION

DETAIL PLAN

SCALE 1:250 @ A1



INSET PLAN

SCALE 1:250 @ A1

LEGEND

- EXISTING BOUNDARY
- PROPOSED STORMWATER PIPES
- R — PROPOSED RIDGE LINE
- V — PROPOSED VALLEY LINE
- PROPOSED BATTER LINE
- 4.60 — EXISTING CONTOURS
- 4.60 — PROPOSED CONTOURS
- PROPOSED SURFACE INLET PITS
- PROPOSED LINTEL ONGRADE & SAG PITS
- 650.98 — EXISTING SPOT LEVEL
- 650.13 — PROPOSED DESIGN FINISHED LEVEL
- H +2.00m — FILL RETAINING WALL
- K&G — PROPOSED KERB & GUTTER
- KO — PROPOSED KERB ONLY
- RW — PROPOSED RETAINING WALL
- O/F — OVERFLOW ROUTE
- A-1 — LINE LETTER / PIT NUMBER — PROPOSED PIT TAG
- 40.125 / Ø425RCP / 20.450m / 1.5% / 39.818 — STORMWATER UPSTREAM INVERT RL. / STORMWATER PIPE DIAMETER & CLASS / STORMWATER PIPE LENGTH / STORMWATER PIPE GRADE / STORMWATER DOWNSTREAM INVERT RL.
- TOW 650.13 — PROPOSED TOP OF WALL LEVEL

0 5 10 15 20 25m

5 4 3 2 1

SCALE 1:250

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY
LINKER SURVEYING PTY LTD
DATUM: (A.H.D.)
ORIGIN OF LEVELS: PM 11170, RL650.160

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DEVELOPMENT APPLICATION	LC	IA	18.01.2016					

Client: OPAL AGED CARE

Architect: GROUP GSA

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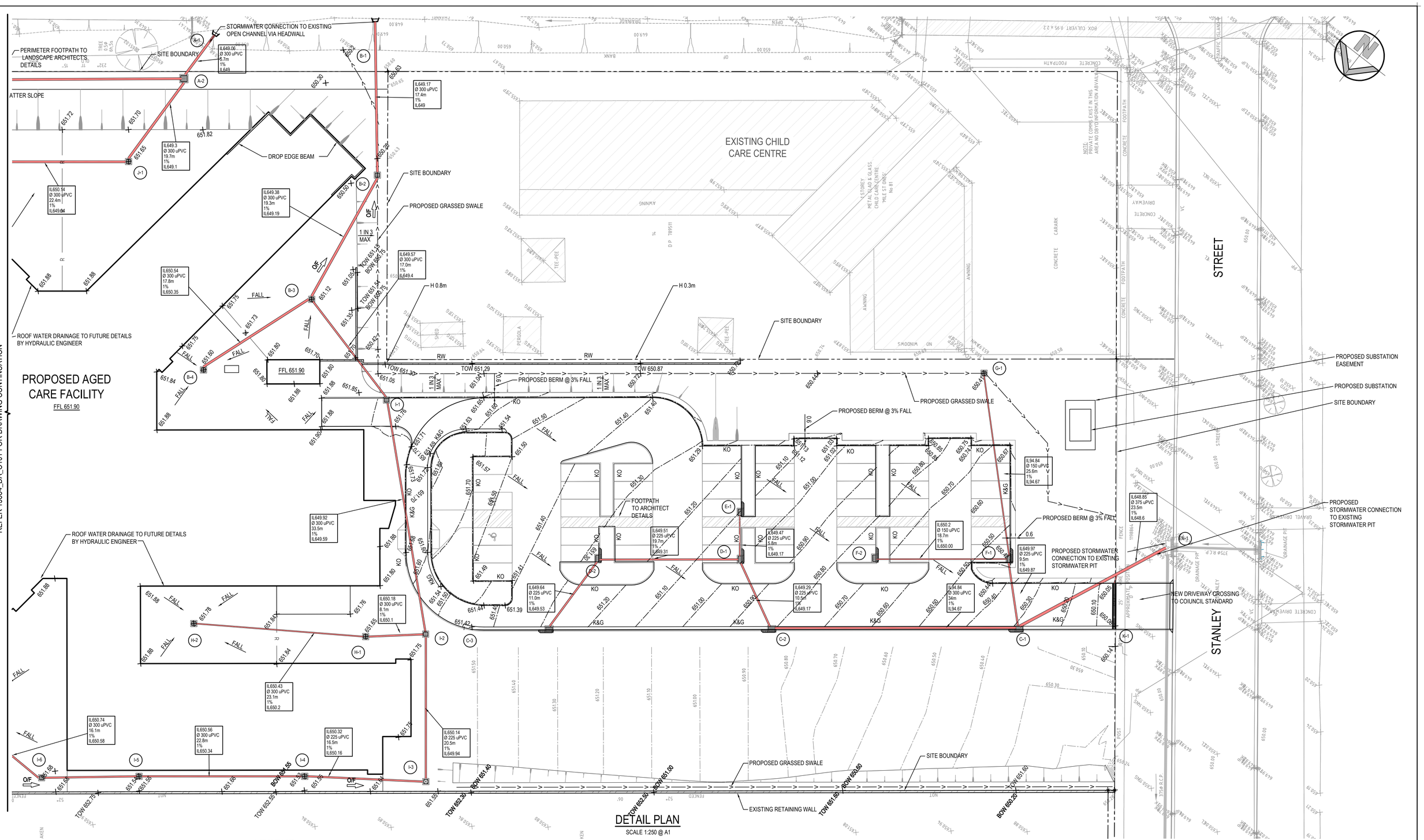
Project: OPAL AGED CARE DEVELOPMENT
LOTS 2, 3,4 AND 5 DP1089380 STANLEY STREET BATHURST

Title: DETAIL PLAN 1 OF 2
DEVELOPMENT APPLICATION

Drawn	Designed	Date
GPan	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	1:250 @ A1

Drawing number: 15884_DA_C101

Revision: 01



DETAIL PLAN

SCALE 1:250 @ A1

LEGEND

- EXISTING BOUNDARY
- PROPOSED STORMWATER PIPES
- PROPOSED RIDGE LINE
- PROPOSED VALLEY LINE
- PROPOSED BATTER LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED SURFACE INLET PITS
- PROPOSED LINTEL ONGRADE & SAG PITS
- EXISTING SPOT LEVEL
- PROPOSED DESIGN FINISHED LEVEL
- FILL RETAINING WALL
- PROPOSED KERB & GUTTER
- PROPOSED KERB ONLY
- PROPOSED RETAINING WALL
- OVERFLOW ROUTE
- PROPOSED PIT TAG
- STORMWATER UPSTREAM INVERT RL.
- STORMWATER PIPE DIAMETER & CLASS
- STORMWATER PIPE LENGTH
- STORMWATER PIPE GRADE
- STORMWATER DOWNSTREAM INVERT RL.
- PROPOSED TOP OF WALL LEVEL

0 5 10 15 20 25m

SCALE 1:250

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY
LINKER SURVEYING PTY LTD
DATUM: (A.H.D.)
ORIGIN OF LEVELS: PM 11170, RL650.160

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DEVELOPMENT APPLICATION	LC	IA	18.01.2016					

Client: OPAL AGED CARE

Architect: GROUP GSA

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henry&hymas

Project: OPAL AGED CARE DEVELOPMENT
LOTS 2, 3,4 AND 5 DP1089380 STANLEY STREET BATHURST

Title: DETAIL PLAN 2 OF 2
DEVELOPMENT APPLICATION

Drawn	Designed	Date
GPan	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	1:250 @ A1

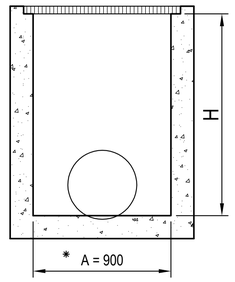
Drawing number: 15884_DA_C102

Revision: 01

TYPICAL PIT CHAMBER SIZES

IT IS THE CONTRACTORS RESPONSIBILITY TO SELECT PIT CHAMBER SIZE WITH REGARDS TO PIPE SIZE, DEPTH TO INVERT AND SKEW ANGLE. REFER SKETCHES BELOW.

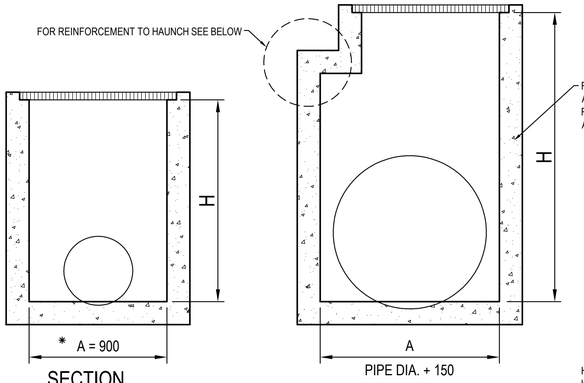
1. SELECT PIT CHAMBER USING THE STEPS BELOW:
2. SELECT PIT CHAMBER SIZE DEPENDING ON THE PIPE DIAMETERS.
3. CHECK PIT CHAMBER SIZE TO SATISFY DEPTH TO INVERT REQUIREMENTS.
   CHECK PIT CHAMBER DIMENSIONS TO SATISFY THE SKEW ANGLE IN THE TABLE.



SECTION
NTS

*A = 600 FOR PIPES UP TO 375 DIA.

1 PIT CHAMBER DIMENSIONS FOR PIPES UP TO 600 DIA.



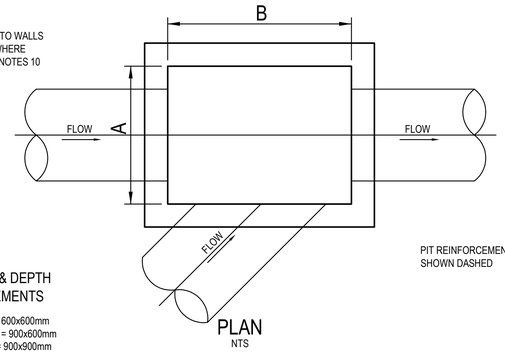
SECTION
NTS

1 PIT CHAMBER FOR PIPES GREATER THAN 600 DIA.

2 PIT SIZE & DEPTH REQUIREMENTS

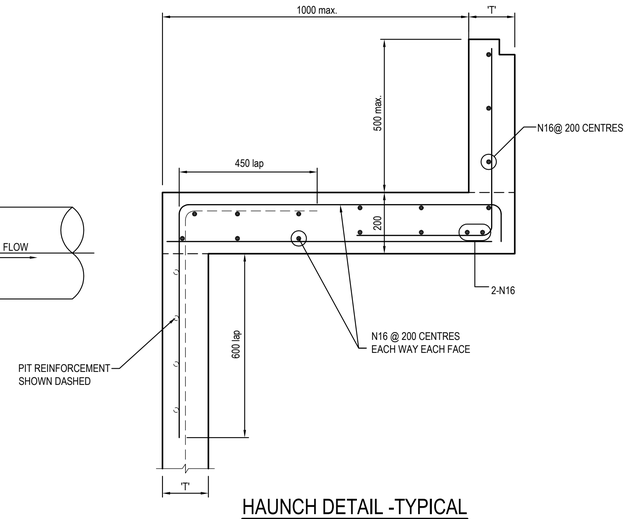
H = 0-900mm - AxB = 600x600mm
H = 900-1200mm - AxB = 900x600mm
H = >1200mm - AxB = 900x900mm

FOR B = 600mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 225mm
FOR B = 900mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 375mm
FOR B = 1200mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 600mm
FOR B = 1500mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 825mm
FOR B = 1900mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 1050mm



PLAN
NTS

3 PIT CHAMBER FOR SIDE ENTRY ON SKEW

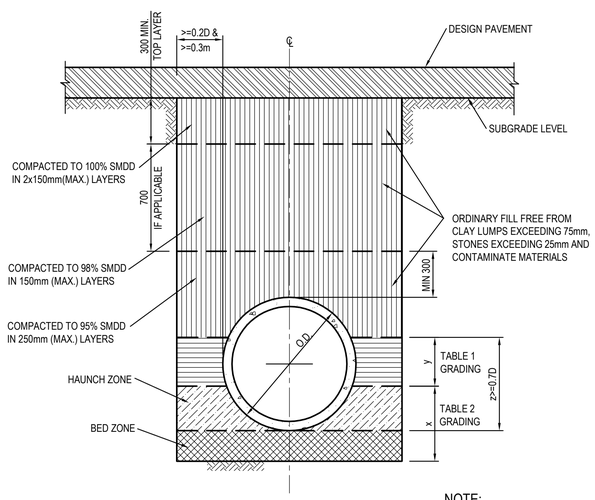


HAUNCH DETAIL -TYPICAL
SCALE 1:10

PIT LID SCHEDULE

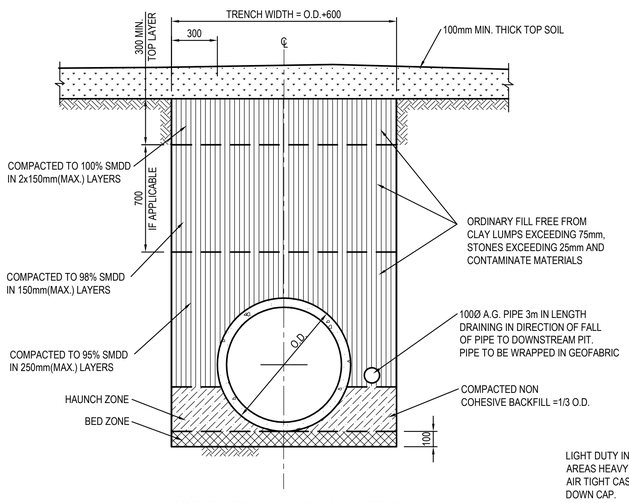
PIT/STRUCTURE NUMBER	DESCRIPTION
A-3, A-4, A-5, A-6, B-3, B-4, I-1, I-2, I-4, I-5, I-6, J-1, J-2, H-2	SAG INLET PIT WITH 600x600 HINGED EXTRA LIGHT DUTY GRATED ACCESS LID CLASS 'B' IN ACCORDANCE WITH BATHURST REGIONAL COUNCIL REQUIREMENTS.
A-2	SAG INLET PIT WITH 900x900 HINGED EXTRA LIGHT DUTY GRATED ACCESS LID CLASS 'B' IN ACCORDANCE WITH BATHURST REGIONAL COUNCIL REQUIREMENTS.
B-2, H-1, G-1	SURFACE INLET PIT WITH 600x600 HINGED LIGHT DUTY CONCRETE LID CLASS 'C' IN ACCORDANCE WITH BATHURST REGIONAL COUNCIL REQUIREMENTS.
I-3	JUNCTION PIT WITH 600x600 HINGED LIGHT DUTY CONCRETE LID CLASS 'C' IN ACCORDANCE WITH BATHURST REGIONAL COUNCIL REQUIREMENTS.
D-2	ON GRADE KERB INLET PIT WITH 0.9m LINTEL AND HEAVY DUTY GRATED LID CLASS "C" IN ACCORDANCE WITH BATHURST REGIONAL COUNCIL REQUIREMENTS
C-1, C-2, C-3, D-1, E-1, F-1, F-2	ON GRADE KERB INLET PIT WITH 1.8m LINTEL AND HEAVY DUTY GRATED LID CLASS "C" IN ACCORDANCE WITH BATHURST REGIONAL COUNCIL REQUIREMENTS

NOTE: REHAU PIPEWORK CONNECTIONS NEED TO BE INSTALLED IN THE STORM WATER PIT IN PHASE
1. IN PHASE 2 THE PIPES WILL BE CONNECTED BY THE ILU CONTRACTOR. POLYMER AWADOCK DN200/160 OR SIMILAR PRODUCTS

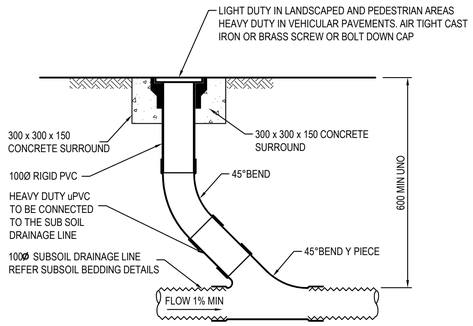


PIPE TRENCH INSTALLATION BENEATH PAVEMENT
(HS SUPPORT TO BE USED UNDER ROADWAY)
SCALE 1:20

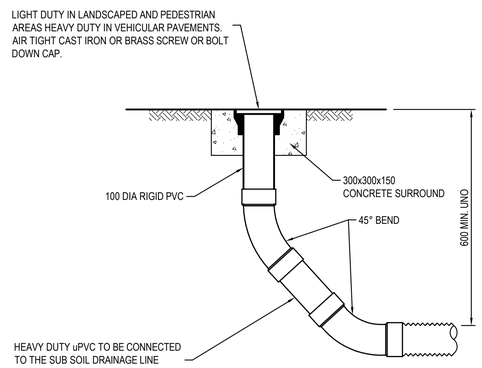
NOTE:
TYPE HS2 TO BE USED AS A TYPICAL SUPPORT FOR TRENCHES UNDER ROADWAY UNLESS SPECIFIED SEPARATELY



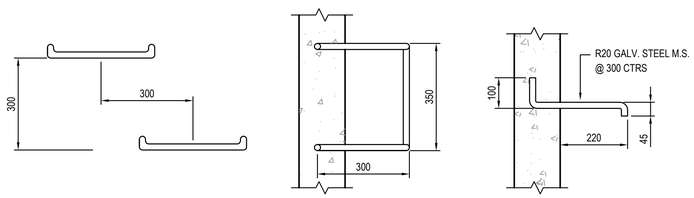
PIPE TRENCH INSTALLATION IN LANDSCAPE AREAS
(H1 & H2 SUPPORT)
SCALE 1:20



INTERMEDIATE RISER (IR)
SCALE 1:10
NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED



FLUSHING POINT (FP)
SCALE 1:10
NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED



ELEVATION PLAN SECTION

TYPICAL STEP IRON DETAIL
SCALE 1:10

DRAINAGE NOTES:

1. ALL STORMWATER WORK TO COMPLY WITH AS 3500 PART 3.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE MINIMUM COVER OF 600mm ON ALL PIPES UNO.
3. PROTECTION OF PIPES DUE TO LOADS EXCEEDING W7 WHEEL LOAD SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
4. BEDDING TYPE SHALL BE TYPE H2 FOR RCP. WHERE NECESSARY THE OVERLAY ZONE SHALL BE REDUCED TO ACCOMMODATE PAVEMENT REQUIREMENTS. REFER TO THIS DRAWING FOR DETAILS.
5. MINIMUM COVER OVER EXISTING PIPES FOR PROTECTION DURING CONSTRUCTION SHALL BE 800mm.
6. NO CONSTRUCTION LOADS SHALL BE APPLIED TO PLASTIC PIPES.
7. FINISHED SURFACE LEVELS SHOWN ON LAYOUT PLAN DRGS TAKE PRECEDENCE OVER DESIGN DRAINAGE SURFACE LEVELS.
8. ALL PIPES UP TO AND INCLUDING 225 DIA. SHALL BE SOLVENT OR RUBBER RING JOINTED PVC CLASS SH PIPE TO AS1260. ALL OTHER PIPES TO BE RCP USING CLASS 2 RUBBER RING JOINTED PIPE. HARDIES FRC PIPE MAY BE USED IN LIEU OF RCP IF DESIRED IN GROUND. ALL AERIAL PIPES TO BE PVC CLASS SH.
9. PIPES 300 DIA. AND LARGER TO BE REINFORCED CONCRETE CLASS '2' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS.
10. ALL PITS IN NON TRAFFICABLE AREAS TO BE PREFABRICATED POLYESTER CONCRETE "POLYCRETE" WITH "LIGHT DUTY" CLASS B GALV. MILD STEEL GRATING AND FRAME.
    ALL PITS IN TRAFFICABLE AREAS TO BE CAST IN STU AND SHALL BE CONSTRUCTED OF 25 MPa CONCRETE HAVING 150mm THICK WALLS AND BASES, REINFORCED WITH SL72 MESH HEAVY DUTY GALV MILD STEEL GRATING AND FRAME. PRECAST PITS, RECTANGULAR OR CIRCULAR IN SHAPE, MAY BE USED IN LIEU AND SHALL COMPLY WITH RELEVANT AUSTRALIAN STANDARDS.
11. ALL PITS, GRATINGS AND FRAMES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION AND TO BE IN ACCORDANCE WITH AS3500.3 AND AS3996.
12. PIT CHAMBER DIMENSIONS ARE TO BE SELECTED TO SATISFY THE FOLLOWING:
    - PIPE SIZE
    - DEPTH TO INVERT
    - SKEW ANGLE
    REFER TYPICAL PIT CHAMBER DETAILS. IF PIT LID SIZE IS SMALLER THAN THE PIT CHAMBER SIZE THEN THE PIT LID IS TO BE CONSTRUCTED ON THE CORNER OF THE PIT CHAMBER WITH THE STEP IRONS DIRECTLY BELOW. ALTERNATIVELY THE PIT LID TO BE USED, IS TO BE THE SAME SIZE AS THE PIT CHAMBER.
13. FOR PIPE SIZES GREATER THAN Ø300mm, PIT FLOOR IS TO BE BENCHED TO FACILITATE FLOW.
14. GALVANISED STEP IRONS SHALL BE PROVIDED AT 300 CTRS FOR PITS HAVING A DEPTH EXCEEDING 1200mm. SUBSOIL DRAINAGE PIPE SHALL BE PROVIDED IN PIPE TRENCHES ADJACENT TO INLET PIPES. (MINIMUM LENGTH 3m)
15. ALL SUBSOIL PIPES SHALL BE 100mm SLOTTED PVC IN A FILTER SOCK, UNO, WITH 3m INSTALLED UPSTREAM OF ALL PITS.
16. ALL PIPEWORK SHALL HAVE MINIMUM DIAMETER 100.
17. MINIMUM GRADE FOR ROOFWATER DRAINAGE LINES SHALL BE 1%.
18. ALL PIPE JUNCTIONS AND TAPER UP TO AND INCLUDING 300 DIA. SHALL BE VIA PURPOSE MADE FITTINGS.
19. ALL ROOF DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH AS3500, PART 3. TESTING TO BE UNDERTAKEN AND REPORTS PROVIDED TO THE SUPERINTENDENT.
20. LOCATION OF THE DIRECT DOWN PIPE CONNECTIONS MAY VARY ON SITE TO SUIT SITE CONDITIONS, WHERE CONNECTION SHOWN ON LONG SECTIONS CHAINAGES ARE INDICATIVE ONLY.
21. PITS IN EXCESS OF 1.5 m DEEP TO HAVE WALL AND FLOOR THICKNESS INCREASED TO 200mm. REINFORCED WITH N12@300 CTS CENTRALLY PLACED THROUGHOUT.

0 200 400 600 800 1000mm
200 100
SCALE 1:10

0 400 800 1200 1600 2000mm
400 200
SCALE 1:20

ISSUED FOR APPROVAL

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DEVELOPMENT APPLICATION	LC	IA	17.12.2015					

Client: OPAL AGED CARE
Architect: GROUP GSA

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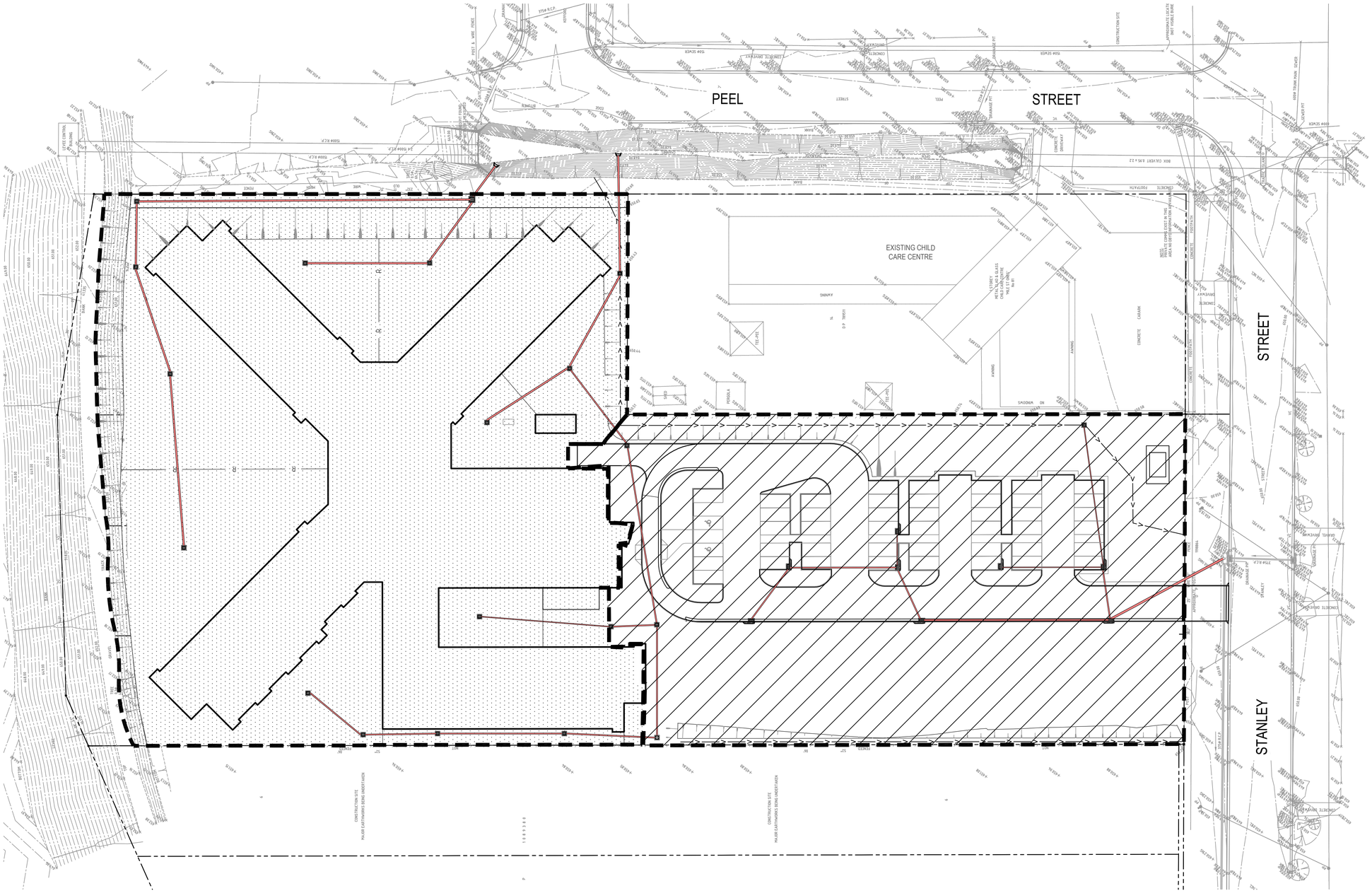
Project: OPAL AGED CARE DEVELOPMENT
LOTS 2, 3,4 AND 5 DP1089380 STANLEY STREET BATHURST

Title: STORMWATER MISCELLANEOUS DETAILS & PIT LID SCHEDULE

Drawn	Designed	Date
GPan	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	AS SHOWN @ A1

Drawing number: 15884_DA_C200
Revision: 01



TOTAL CATCHMENT
AREA:16093m²

CATCHMENT DRAINING TO OPEN CHANNEL
AREA =9707m²

CATCHMENT DRAINING TO STANLEY STREET
AREA = 6386m²

CATCHMENT PLAN
SCALE 1:400

0 8 16 24 32 40m
8 6 4 2
SCALE 1:400

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY
LINKER SURVEYING PTY LTD
DATUM: (A.H.D.)
ORIGIN OF LEVELS: PM 11170, RL650.160

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DEVELOPMENT APPLICATION	LC	IA	18.01.2016					

Client
OPAL AGED CARE

Architect
GROUP GSA

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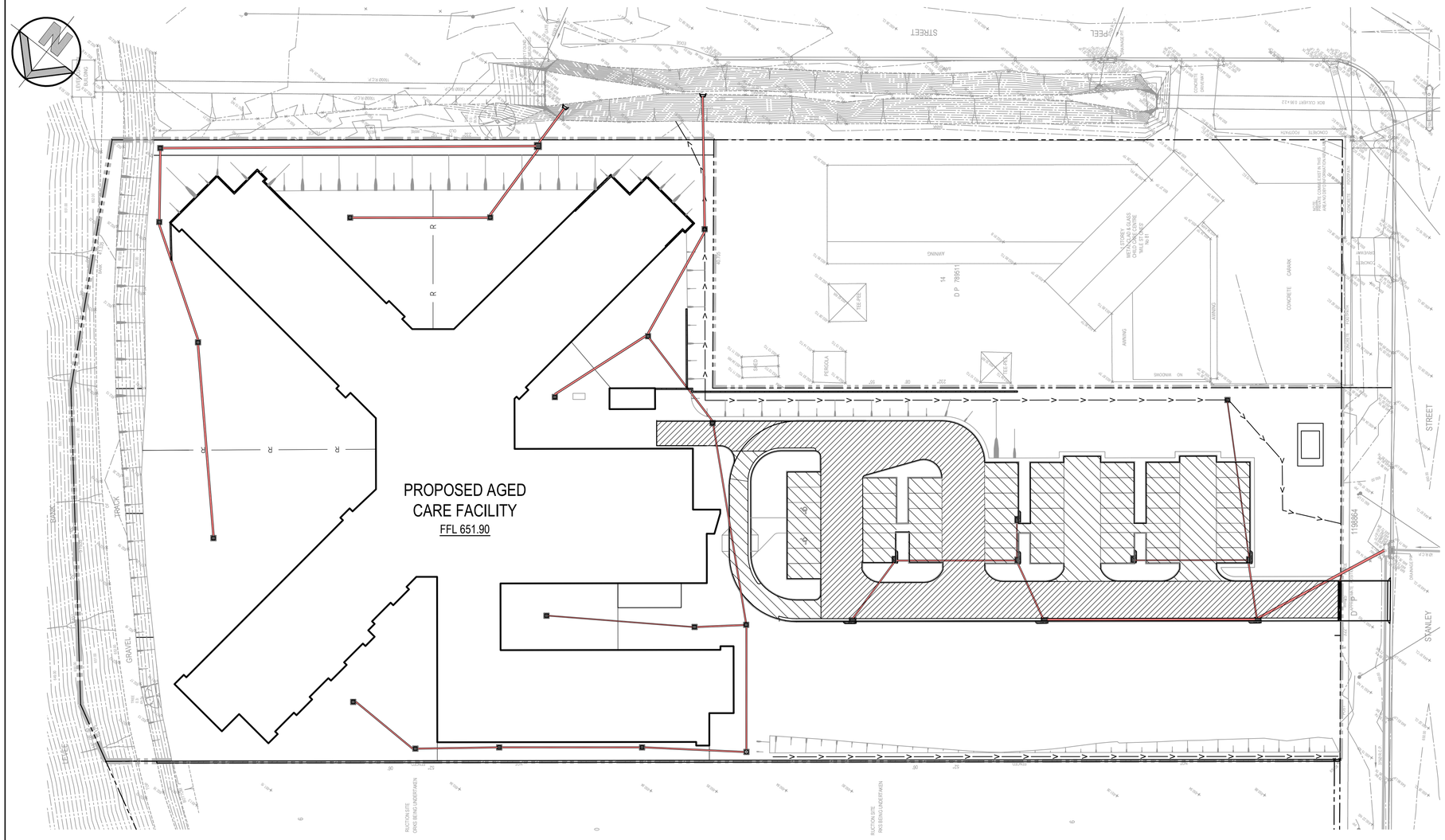
Project
OPAL AGED CARE DEVELOPMENT
LOTS 2,3,4 AND 5 DP1089380 STANLEY STREET BATHURST

Title
CATCHMENT PLAN
DEVELOPMENT APPLICATION

Drawn	Designed	Date
GPan	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	1:400 @ A1

Drawing number 15884_DA_C250
Revision 01



PAVEMENT TYPE LEGEND

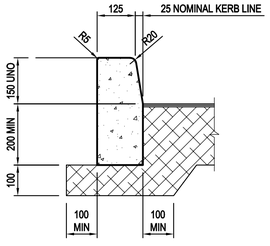
PAVEMENT TYPE 1
HEAVY DUTY ASPHALT PAVEMENT

- 50mm ASPHALT CONCRETE AC10
- 250mm DGB20 OR APPROVED EQUIVALENT
- 300mm DGB40 OR APPROVED EQUIVALENT
- COMPACTED SUBGRADE

PAVEMENT TYPE 2
LIGHT DUTY ASPHALT PAVEMENT

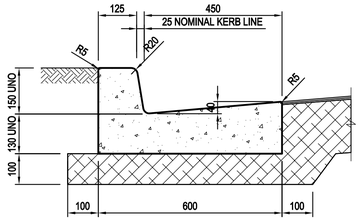
- 30mm ASPHALT CONCRETE AC10
- 150mm DGB20 OR APPROVED EQUIVALENT
- 150mm DGB40 OR APPROVED EQUIVALENT
- COMPACTED SUBGRADE

PAVEMENT PLAN
SCALE 1:400



KERB ONLY (KO)
SCALE 1:10

NOTE:
CONFIRM DIMENSIONS AND
DETAILS WITH LOCAL AUTHORITY



KERB & GUTTER (K&G)
SCALE 1:10

NOTE:
CONFIRM DIMENSIONS AND DETAILS WITH
LOCAL AUTHORITY

0 200 400 600 800 1000mm
200 100
SCALE 1:10

0 8 16 24 32 40m
8 6 4 2
SCALE 1:400

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY
LINKER SURVEYING PTY LTD
DATUM: (A.H.D.)
ORIGIN OF LEVELS: PM 11170, RL650.160

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR COUNCIL APPROVAL	LC	IA	18.01.2016					

Client
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Architect
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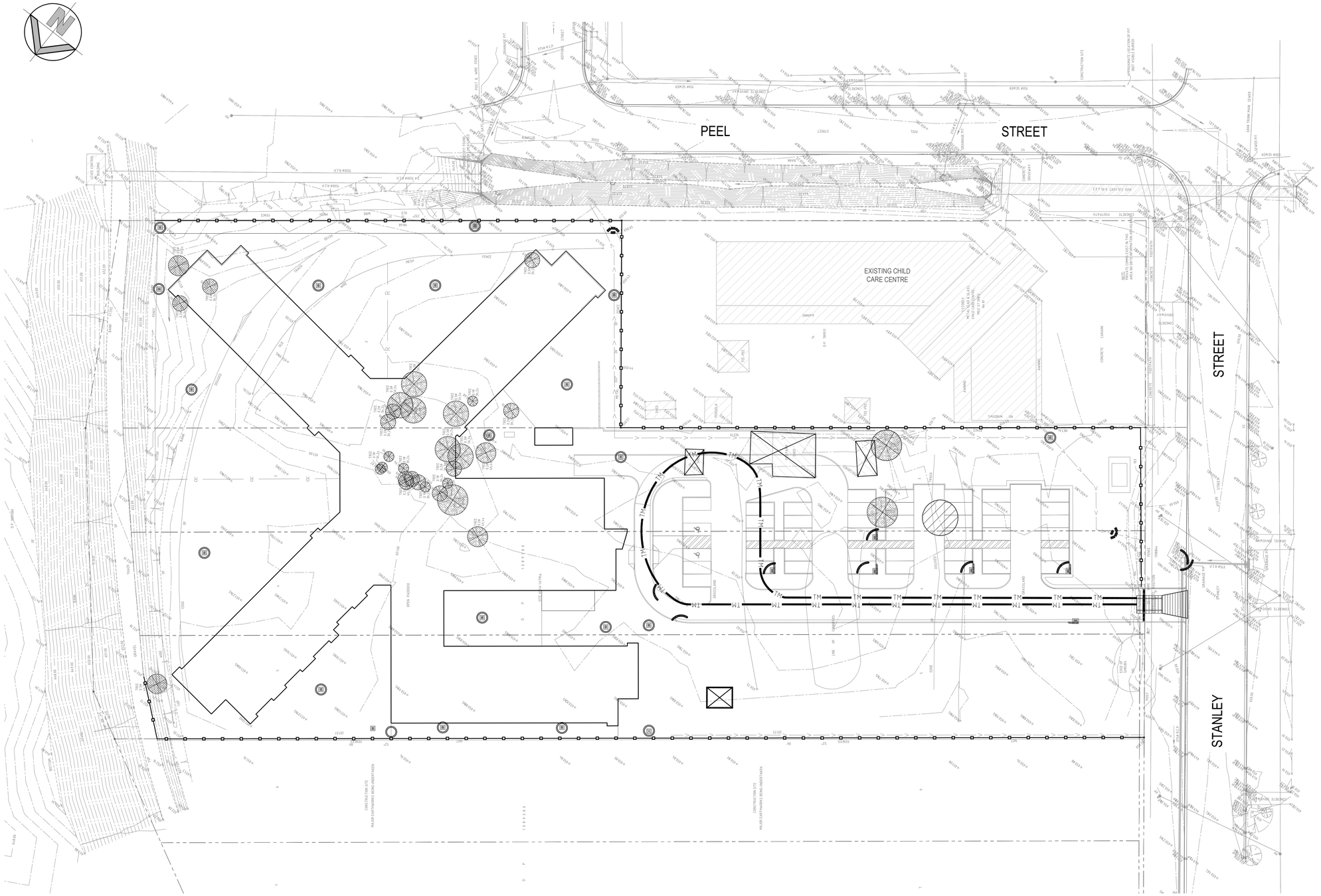
Project
OPAL AGED CARE DEVELOPMENT
LOTS 2,3,4 AND 5 DP1089380 STANLEY STREET BATHURST

Title
PAVEMENT PLAN
DEVELOPMENT APPLICATION

Drawn	Designed	Date
GPan	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	AS SHOWN @ A1

Drawing number: 15884_DA_C500
Revision: 01



GENERAL INSTRUCTIONS

1. 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.
2. AS REQUIRED BY BATHURST REGIONAL 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 REQUIREMENTS.
3. THE CONTRACTOR SHALL ENSURE THAT ALL SUBCONTRACTORS ARE INFORMED OF THEIR RESPONSIBILITIES IN MINIMISING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.
4. THE NON-DISTURBED PORTION OF THE CATCHMENT OUTSIDE OF OPERATING AREA IS TO BYPASS THE BASINS BY MEANS OF LINED CATCH DRAINS.
5. WHERE PRACTICABLE, THE SOIL EROSION HAZARD SHALL BE KEPT AS LOW AS POSSIBLE. LIMITATIONS TO ACCESS ARE TO BE VIA THE SEALED ACCESS ROAD OFF STANLEY STREET UNLESS OTHERWISE APPROVED BY COUNCIL
6. 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%.
7. CONSTRUCT ADDITIONAL EROSION OR SEDIMENT CONTROL WORKS AS MAY BE APPROPRIATE TO ENSURE THE PROTECTION OF DOWNSLOPE LANDS AND WATERWAYS.
8. MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES IN A FULLY FUNCTIONING CONDITION AT ALL TIMES UNTIL THE SITE IS REHABILITATED.
9. REMOVE TEMPORARY SOIL CONSERVATION STRUCTURES AS THE LAST ACTIVITY IN THE REHABILITATION PROGRAM.

EROSION CONTROL REQUIREMENTS

1. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED AT THE DISCRETION OF THE SITE SUPERINTENDENT TO ENSURE TRAFFIC CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE. VEHICULAR ACCESS TO THE SITE SHALL BE LIMITED TO ONLY THAT ESSENTIAL FOR CONSTRUCTION WORK AND SHALL ENTER THE SITE ONLY THROUGH THE STABIILISED ACCESS POINT.
2. SOIL MATERIALS SHALL BE REPLACED IN THE SAME LAYERS THEY ARE REMOVED FROM THE GROUND *i.e.* ALL SUBSOILS ARE TO BE BURIED AND TOPSOIL IS TO BE RESPREAD ON THE SURFACE AT THE COMPLETION OF WORKS.
3. ALL DISTURBED AREAS ARE TO BE STABILISED WITHIN SEVEN WORKING DAYS OF THE COMPLETION OF LAND SHAPING. ALL DISTURBED AREAS ARE TO BE PROTECTED SO THAT THE LAND IS PERMANENTLY STABILISED WITHIN SIX MONTHS. TOPSOIL SHALL BE RESPREAD OVER THE SITE, OTHER THAN LOT RE-GRADING AREAS, TO A MINIMUM DEPTH OF 100mm ON BARE BUT TYNED SOIL SURFACES AND THE SITE SHALL BE REVEGETATED TO FUTURE DETAILS

LEGEND

- TRAFFIC MANOEUVRING
- PROPOSED VEHICLE SHAKER GRID
- PROPOSED STABILISED SITE ACCESS
- PROPOSED STOCKPILE LOCATION
- CATCH DIVERSION DRAIN
- PROPOSED SEDIMENTATION FENCE / SITE SECURITY FENCE
- PROPOSED HAYBALE FILTER
- PROPOSED MESH & GRAVEL INLET FILTER
- GEOTEXTILE INLET FILTER
- REMOVE EXISTING TREE
- REMOVE EXISTING SHED

SEDIMENT EROSION CONTROL PLAN

SCALE 1:400 @ A1

NOTE:

ALL EXISTING TREES AND STRUCTURES TO BE REMOVED PRIOR TO COMMENCEMENT OF EARTHWORKS

0 8 16 24 32 40m
8 6 4 2
SCALE 1:400

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY
LINKER SURVEYING PTY LTD
DATUM: (A.H.D.)
ORIGIN OF LEVELS: PM 11170, RL650.160

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01	ISSUED FOR DEVELOPMENT APPLICATIONS	LC	IA	18.01.2016					

Client
OPAL AGED CARE

Architect
GROUP GSA

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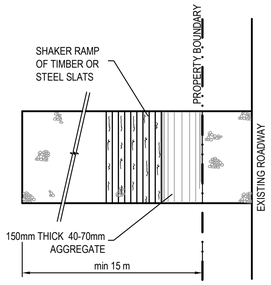
Project
OPAL AGED CARE DEVELOPMENT
LOTS 2,3,4 AND 5 DP1089380 STANLEY STREET BATHURST

Title
SEDIMENT AND EROSION CONTROL PLAN
DEVELOPMENT APPLICATION

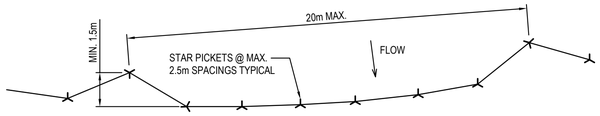
Drawn	Designed	Date
G.Pan	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	1:400 @ A1

Drawing number: 15884_DA_SE01
Revision: 01

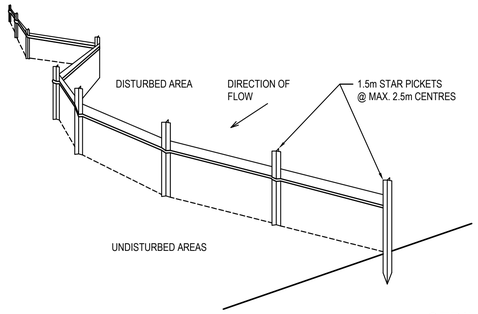


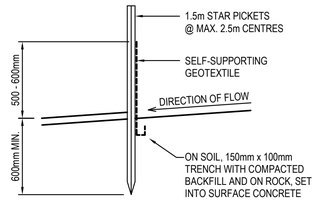
PLAN
STABILISED SITE ACCESS WITH SHAKER RAMP

N.T.S.



PLAN





SECTION DETAIL

SEDIMENT FENCE

SCALE N.T.S.

SEDIMENT FENCE CONSTRUCTION NOTES:

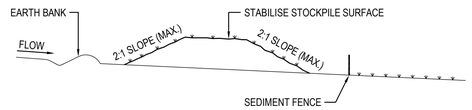
1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND 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. 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. 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. 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.

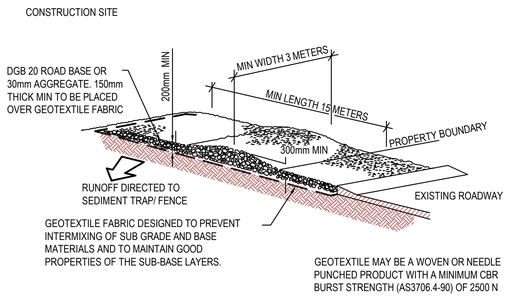


STOCKPILE CONSTRUCTION NOTES:

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE 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 STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

STOCKPILES

SCALE N.T.S.



STABILISED SITE ACCESS WITH SHAKER RAMP

N.T.S.

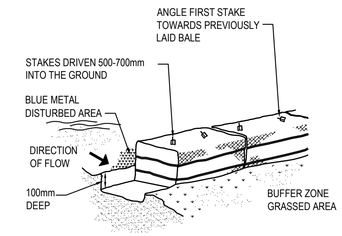
NOTES:

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.

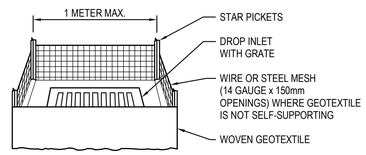
3. ANY UNSEALED ROAD BETWEEN THIS DEVICE AND NEAREST ROADWAY IS TO BE TOPPED WITH 100mm THICK 40-70mm SIZE AGGREGATE.

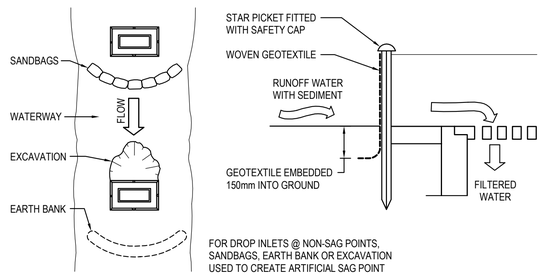
4. ALTERNATIVELY, THREE(3) PRECAST CONCRETE CATTLE GRIDS (AS MANUFACTURED BY "HUMES CONCRETE MAY BE USED. 1, 2 & 3 ABOVE ALSO APPLY.



HAYBALE BARRIERS

N.T.S.



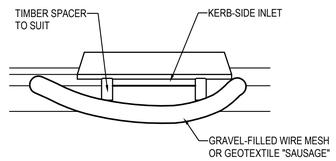


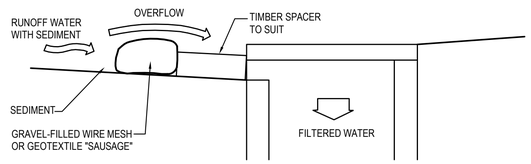
GEOTEXTILE INLET FILTER CONSTRUCTION NOTES:

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE.
2. PICKET SPACING TO BE MAXIMUM 1.0m.
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 GEOTEXTILES UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER

SCALE N.T.S.





MESH & GRAVEL INLET FILTER CONSTRUCTION NOTES:

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

SCALE N.T.S.

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY
LINKER SURVEYING PTY LTD
DATUM: (A.H.D.)
ORIGIN OF LEVELS: PM 11170, RL650.160

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR DEVELOPMENT APPLICATION	LC	IA	18.01.2016					

Client: OPAL AGED CARE

Architect: GROUP GSA

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Web www.henryandhymas.com.au

henry&hymas

Project: OPAL AGED CARE DEVELOPMENT
LOTS 2,3,4 AND 5 DP1089380 STANLEY STREET BATHURST

Title: SEDIMENT AND EROSION CONTROL DETAILS
DEVELOPMENT APPLICATION

Drawn	Designed	Date
G.Pan	I. AHMED	OCT 2015
Checked	Approved	Scale
I. AHMED	A. FRANCIS	AS SHOWN @ A1

Drawing number: 15884_DA_SE02
Revision: 01

OPAL AGED CARE

OPAL AGED CARE
STANLEY STREET, BATHURST
ENGINEERING REPORT

Revision 1
January 2016

HENRY & HYMAS
LEVEL 5, 79 VICTORIA AVENUE
CHATSWOOD NSW 2067
Our Ref: 15884
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E-mail: email@hhconsult.com.au

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1 INTRODUCTION

1.1 General

This Engineering Report has been prepared to supplement the proposed Development Application (DA) to Bathurst Regional Council for the Opal Aged Care development located at Stanley Street, Bathurst. The development will consist of an aged care facility building.

The following Engineering matters have been addressed in this report:

- Site Works including road and footpath network, bulk earthworks and retaining walls;
- Stormwater Management;
- Services provision;

The purpose of this report is to provide an overview of the various Engineering issues that relate to the site and how these issues have been addressed.

A full set of DA Drawings is provided in Appendix A of this report which detail the various Engineering issues listed above.

1.2 Engineering Objectives

One of the Engineering objectives for the development is to provide a safe and efficient access road, parking and pedestrian footpath network for the occupants and visitors to the development. In addition, road and footpath grades must be sympathetic to the needs of the users of the network.

The site has been designed such that the grades are sympathetic to the end users whilst giving consideration for minimum sewer grades. Also it was done to assist in minimising the impact on import soil resources. As a result, retaining walls will be required in some areas of the site, particularly in the southern boundary. These walls have been designed taking into account both amenity and with due consideration for the visual appearance from adjoining properties or roads.

The stormwater network must be designed to safely convey minor storm events via a pit and pipe stormwater system with provision for larger, more infrequent storm events overland via the grassed swales.

Services will be provided to facilitate the development. These services include electricity, communications, water, sewer and stormwater. All services within the development will be privately owned and maintained services with the exception of necessary service provider or supply authority feeds. Detailed Drawings of services infrastructure will be provided at Construction Certificate stage.

1.3 Engineering Principles

The following principles have been adopted as part of the design process:

- Consideration of design intent in relation to functionality and expectations and requirements of end user.
- Compliance with relevant Council and authority standards and policies.
- Design coordination with design team.
- A design philosophy sympathetic to the terrain and landform.
- Consideration of impact on existing infrastructure in terms of available capacity.

1.4 The Site & Its Context

The Opal RACF site comprises an area of approximately 1.6 ha of currently undeveloped land. The site is located in between the Macquarie River and Stanley Street, Bathurst. Adjacent to the site on the southern side is an open channel and an existing child care facility. It is protected from flooding by the levee.

The site will have pedestrian and vehicular access from Stanley Street.

2 SITE WORKS

2.1 Road and Pedestrian Footpath Network

The only internal access road within the site will be privately owned and maintained. As such direct vehicular access to the aged care facility will be via the existing public road network.

Since the development will be used by people with impaired mobility, the road and footpath grades are generally quite flat and meet the requirements of AS1428.1. With the exception of kerb ramps at road crossings, grades are generally less than 5% (1 in 20) which means that handrails are not required.

2.2 Parking

Parking will be provided in designated parking bays located within close proximity to the aged care facility.

2.3 Bulk Earthworks

As previously stated, the site has been designed such that the grades are sympathetic to requirements of the end users whilst giving consideration for minimum sewer grades. In order to achieve the required site levels, there will be a requirement to import in the order of 8,000m^3 of soil material that will be suitable as engineered fill.

The site will generally be filled by approximately 1m along the north western boundary. The neighbouring site to the north-west is also proposed to be filled and it is envisaged that only level difference will be made up by battering or low retaining walls.

The site will also be filled in the order of 1m along the north eastern boundary. The levee is situated to the north east of the site and the filling of the site will retain the ground level of the site below the top of the levee. The filling is proposed to extend up to the levee bank and retaining structures will not be required along this boundary.

The south eastern boundary of the site that fronts Peel Street will be battered down to match the existing road reserve levels and as such no retaining walls will be required along the Peel Street frontage.

The south western side of the site that fronts Stanley Street will not require filling and will match the existing Stanley Street frontage with no retaining structures required.

In addition to these four boundaries, the site is adjacent to the existing child care centre and shares common boundaries with the north eastern and north western boundaries of the child care centre. There will be a limited extent of retaining structures will be required along the north eastern boundary of the child care centre and in most cases the site will batter down to match the levels here. A swale will be provided along this boundary that will direct runoff from the site towards the swale on Peel Street.

A retaining structure will be required along the north western boundary of the child care centre of up to 0.8m height. This wall is required to ensure there is fall along this boundary towards Stanley Street.

The bulk earthworks for the site has been designed to keep site levels down as much as possible and to achieve optimal cut and fill quantities to minimise soil importation and maintaining appropriate grades and minimising heights of retaining walls and fill.

2.4 Flood Planning Report

A flood planning report was prepared for Opal Aged Care on 3rd of November, 2015 (refer Appendix C for the complete report). The report outlines the compatibility of the development in the Flood Planning area. Based on discussions with Council's Engineers, it is understood that the site is protected from flooding from the Macquarie River by the levee constructed along the north eastern boundary of the site. Penstocks are engaged to prevent flood waters from the river backcharging upstream of the levee.

There is an open channel located along the south eastern side of the site which drains to a headwall and twin 1500mm diameter pipes that subsequently drain to the river. These pipes are controlled by penstocks which are closed when the river is flooding which prevent water backcharging into the upstream side of the levee. It is also understood that the channel could potentially be subject to localised flooding from the catchment draining from the west of the site whilst the penstocks are closed.

Since site development is protected from flooding of the river, the flood planning level for the site is dictated by the localised flood within the open channel when the penstocks are closed. Council has advised that the floor level (Flood Planning Level) should be no lower than the floor level that was approved for the adjacent child care centre which is 650.88, which is understood to be the flood level associated with the local catchment once the penstocks are engaged.

The nominated floor level of the proposed development is 651.9 which is 1.02m above the Flood Planning Level.

Since the open channel along Peel Street is untilised for flood storage of the local flood and the site is above the flood planning level, additional filling of the site will not impact on flood storage of the local catchment.

A Flood Evacuation Strategy has also been prepared for the site which is included in Appendix D.

2.5 Supervision of Earthworks

All geotechnical testing and supervision during the earthworks operations will be undertaken to Level 1 geotechnical control, in accordance with AS3798-1996.

3 STORMWATER MANAGEMENT

3.1 Introduction

3.1.1 Background

Stormwater controls will be implemented that ensure that the proposed development does not adversely impact on stormwater flows and water quality of the stormwater system downstream of the site.

Based on discussions with council via email (20/10/2015), there are no council requirements for water quality and water re-use.

The principles and operation of the proposed stormwater system for the development including the components of the carpark and internal access road drainage system are detailed on the Development Application Drawings included in Appendix A.

3.2 Stormwater Quantity

3.2.1 Catchment Description

The existing catchment is predominantly rural in character and is relatively flat.

The developed catchment will comprise of a mixture of impervious and pervious areas. The majority of the runoff from the developed site is impervious and consists of carpark, footpaths, roof areas and other paved areas. The pervious component of the developed catchment consists of vegetated landscaping, private grassed areas as well as road reserve landscaping.

3.2.2 Existing Drainage System

Currently, the site falls in two directions. One side falls towards Stanley Street and the other towards the adjacent open channel in Peel Street. As such the site is designed to maintain the pre-developed catchments.

3.2.3 Proposed Drainage System

The drainage system for Aged Care Facility has been designed to collect all concentrated flows from the future building pads and impervious surfaces such as roads, driveways, footpaths and roof areas. The piped drainage system has been designed generally to convey the 1 in 20 year ARI with adequate provision for the 1 in 100 year ARI to be safely conveyed overland.

The stormwater network has been designed to safely convey minor storm events via a pit and pipe stormwater system with provision for larger, more infrequent storm events overland via the grassed swales.

Based on discussions with council via email (20/10/2015), there is no Council requirement for an On-Site Stormwater Detention (OSD) system.

The proposed development will have two separate catchments with one draining to open channel in Peel Street and the other to the existing stormwater pit at Stanley Street.

The various scenarios for the proposed development are described below.

3.2.3.1 Carpark and internal access road

The carpark will drain via pits and pipe networks to the existing stormwater pit at Stanley Street.

3.2.3.2 Aged Care Facility

The majority of the aged care facility will discharge via pits and pipe network directly to the open channel in Peel Street.

Some of the paved and landscaped areas associated with the aged care facility will drain overland to the channel pit and pipe network.

4 SERVICES

4.1 Introduction

As previously stated, services infrastructure will be provided to facilitate the development. These services include electricity, communications, water, sewer, gas and stormwater. Details of the various services are provided below.

4.2 Water

Dual potable water and fire service watermains will be provided for the development. These will be privately owned, operated and maintained watermains. The mains will be reticulated throughout the site and will be connected to the existing 100 mm diameter water main in Stanley Street which is owned by Bathurst Regional Council. The detailed watermain design will be provided at Construction Certificate stage.

4.3 Sewer

The development will be serviced by privately owned sewer mains within the site boundary. The sewer network will be a conventional gravity sewerage system that will connect to the Bathurst Regional Council sewerage network. Based on discussions with council via email (5/11/2015), the proposed sewer will be connected to existing manhole at Kefford Street. The new sewer connection from the site boundary to the manhole will be owned by Bathurst Regional Council (refer to the email dated 5/11/2015 in Appendix B).

The detailed sewer main design will be provided at Construction Certificate stage.

4.4 Electricity

Private electricity mains and lighting will be provided for the development. The low voltage reticulation mains will be distributed from the high voltage kiosk substation located within the site. Electrical Engineers have been engaged to conduct the internal electricity mains design. The detailed electricity main design will be provided at Construction Certificate stage and will require approval from Essential Energy.

4.5 Stormwater

Refer Section 3 above for details of the proposed stormwater systems for the proposed development.

5 CONCLUSION

The design provides a safe and efficient road access, carpark and pedestrian footpath network for the proposed development which will be sympathetic to the needs of the users of the network. The road and footpath network will be integrated with appropriate traffic facilities to assist in controlling parking, traffic guidance and pedestrian safety.

Design efficiencies have been adopted to ensure a balance between retaining wall heights and earthworks quantities whilst maintaining grades that are sympathetic to the end user. These efficiencies assist in minimising the impact on local landfill resources.

Whilst it is inevitable that development will have an impact of the existing landform and stormwater runoff characteristics due to earthworks, change of land-use and changes in impervious areas; by providing a safe and efficient design, and implementing appropriate measures during construction and operation of the development, it can be ensured that there will be minimal impact on the existing environment as a result of the proposed development.

It should be noted that the design shown in this report is for the Development Application. During the detailed design stages, a further refinement of the modelling based on the detail design of the development will be carried out.

6 References

- Bathurst Regional Council- Guidelines for Engineering works within City of Bathurst, 6 September 2011

- Landcom - "Soils and Construction Volume 1 – 4th Edition", March 2004

- Institution of Engineers, Australia - "Australian Rainfall and Runoff 3rd Edition", 1987

APPENDIX A

DEVELOPMENT APPLICATION DRAWINGS

APPENDIX B

E-MAIL CORRESPONDENCE

Imran Ahmed

From: david.mckellar@bathurst.nsw.gov.au
Sent: Thursday, 5 November 2015 9:31 AM
To: Imran Ahmed
Cc: damien.tom@bathurst.nsw.gov.au
Subject: Re: Bathurst RACF

Morning Imran

Thank you for the provision of the sewerage proposal sketch. Council Has no objections or preferences to either proposal.

Please note that the sewer main between the existing manhole and the connection point to your clients house drainage system (internal sewer) is to be designed as a Council sewerage main in accordance with Council's Guidelines for Engineering Works.

Therefore the new Council sewerage main needs to be constructed in accordance with the following points:-
1) Minimum 150 mm diameter pipe.
2) Pipe class and type, Rubber Ring Jointed uPVC Class SeH (SN-8) with a minimum cover of 700 mm. If minimum cover can not be achieved Council will allow the use of ductile iron pipe from manhole to manhole with a minimum cover of 450 mm.
3) Council requires manholes to be constructed at all changes of grade, direction or pipe material.
4) All trenches through existing roadways are to be backfilledfull depth with 5 MPa, 27:1 sand:cement mixture.
5) The connection between the Council sewerage main and the property house drainage line is to occur at a 150 mm diameter inspection shaft full contained within the boundary of the subject allotment.
6) All Council sewerage main grades are to comply with table 5.1 of Council's Guidelines for Engineering Works.

I trust the above information is of assistance.

Regards Dave

David Mckellar
Development Supervisor
Bathurst Regional Council
158 Russell Street Bathurst 2795
Phone: 02 6333 6109
Fax: 02 6333 6115
Mobile: 0418 967 114
www.bathurst.nsw.gov.au

From: Imran Ahmed <iahmed@hhconsult.com.au>
To: "david.mckellar@bathurst.nsw.gov.au" <david.mckellar@bathurst.nsw.gov.au>, "'damien.tom@bathurst.nsw.gov.au'" <damien.tom@bathurst.nsw.gov.au>,

Cc: Andrew Francis <afrancis@hhconsult.com.au>
Date: 03/11/2015 05:22 PM
Subject: Bathurst RACF

Hi David,

As per our conversation today, it is understood that the sewer main located outside the site boundary will be a Council main. On this basis, we will design the main in accordance with Council's Guideline for Engineering Works.

In addition, whilst we had an in principal agreement to drain the sewer from the site in a suspended pipe across the open stormwater channel, we are also looking at an option of draining the sewer from the site further east such that the sewer crosses in ground over the existing twin 1500mm diameter stormwater pipes downstream of the channel. We are looking into which one of these two options better suits the sewer drainage for the site. Please advise if this alternative would also be acceptable. See attached sketch for details.

Please review and let me know your thoughts.

Regards,

Imran Ahmed
Civil Engineer
Henry & Hymas
Level 5, 79 Victoria Avenue
Chatswood NSW 2067
Phone: 02 9417 8400
Fax: 02 9417 8337

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[attachment "[Untitled].pdf" deleted by David McKellar/BathurstCC]

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the purpose for which it is copied or forwarded are work related."
****

Imran Ahmed

From: david.mckellar@bathurst.nsw.gov.au
Sent: Tuesday, 20 October 2015 8:54 AM
To: Imran Ahmed
Subject: Re: FW: 15884 - Aged Care Facility - Stanley Street Bathurst

HI Imran

Please be advised that Bathurst Regional Council currently has no requirement for the provision of onsite detention on storm water systems for development works in the Council area.

Council's engineering department has no requirements in relation to water quality and water re-use for your site. However you should discuss these matters with Council's Environment, Planning and Building Services Department, they will be able to provide advice regarding your requirements under Section J of the BCA.

regards Dave

David Mckellar
Development Supervisor
Bathurst Regional Council
158 Russell Street Bathurst 2795
Phone: 02 6333 6109
Fax: 02 6333 6115
Mobile: 0418 967 114
www.bathurst.nsw.gov.au

From: Imran Ahmed <iahmed@hhconsult.com.au>
To: "david.mckellar@bathurst.nsw.gov.au" <david.mckellar@bathurst.nsw.gov.au>,
Cc: Andrew Francis <afrancis@hhconsult.com.au>
Date: 19/10/2015 05:50 PM
Subject: FW: 15884 - Aged Care Facility - Stanley Street Bathurst

---

Hi David,

Please refer to the email below.

Would you be able to reconfirm whether we need an OSD for site within RU4 zone (and other items below).

In addition , is there any water quality and water re-use (rainwater tank) requirements for this site?

Regards,

Imran Ahmed
Civil Engineer

APPENDIX C

FLOOD PLANNING REPORT

H&H Consulting Engineers Pty Ltd *(trading as Henry & Hymas)*

ABN 77 091 243 355
ACN 091 243 355

Address
Level 5
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Web
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henry&hymas

3 November 2014

Our Ref: 15884-C1/af

Opal Aged Care
c/- BBC Consulting Planners
PO Box 438
BROADWAY NSW 2007

Attention: Dan Brindle

Dear Dan,

RE: OPAL AGED CARE
81 & 105 STANLEY STREET, BATHURST, NSW
FLOOD PLANNING REPORT

I refer to the proposed aged care development at 81 and 105 Stanley Street, Bathurst. It is understood that the site is classified as being in a Flood Planning Area and is therefore subject to a minimum floor level and other planning considerations.

Based on discussions with Council's Engineers, it is understood that the site is protected from flooding from the Macquarie River by the levee constructed along the north eastern boundary of the site. There is an open channel located along the south eastern side of the site which drains to a headwall and twin 1500mm diameter pipes that subsequently drain to the river. These pipes are controlled by penstocks which are closed when the river is flooding which prevent water backcharging into the upstream side of the levee. It is also understood that the channel could potentially be subject to localised flooding from the catchment draining from the west of the site whilst the penstocks are closed.

Since site development site is protected from flooding of the river, the flood planning level for the site is dictated by the localised flood within the open channel when the penstocks are closed. Council has advised that the floor level (Flood Planning Level) should be no lower than the floor level that was approved for the adjacent child care centre which is 650.88.

The floor level of the proposed development is 651.9 which is1.02m above the Flood Planning Level.

For the development to be granted, the development must meet the requirements of the Flood Planning policy.

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The development is compatible with and meets the requirements of Council's Flood Planning policy as per below:

- The floor level is set above the Flood Planning Level which means the development is compatible with the flood hazard of the land. With the floor level being set above the Flood Planning Level, the development is no longer affected by the 1 in 100 year flood event.
- The Development is outside the extent of the localised ponding in the overland flow channel, and as such, the filling of the site will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties.
- The development incorporates appropriate measures to manage risk to life from flood in that residents and staff may remain on site at a level above the 1 in 100 year storm event in the event of a localised flood.
- The site will be developed with either built form or landscaping and as such the development will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses. Stormwater discharge and runoff from the site will be either piped directly to the existing piped drainage network in Stanley Street or discharged in a controlled manner to the existing stormwater channel in Peel Street. The outlet to the channel will be stabilised in the form of scour protection.
- Since the development will be located above the 1 in 100 year storm event, there will be no social and economic costs to the community as a consequence of flooding.

I trust this information meets your requirements. If you have any further inquiries, please do not hesitate to give me a call.

Yours faithfully,

ANDREW FRANCIS
For, and on behalf of,
H & H Consulting Engineers Pty Ltd

APPENDIX D

FLOOD EVACUATION STRATEGY

FLOOD EVACUATION STRATEGY
PROPOSED AGED CARE
Lots 3, 4, 5 AND 6 DP1089380
Stanley Street
BATHURST, NSW

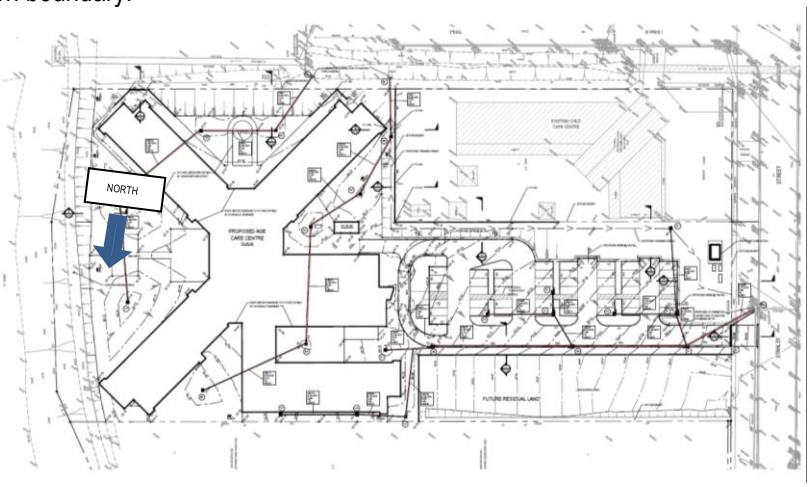
Revision 1
DECEMBER 2015

HENRY & HYMAS
LEVEL 5, 79 VICTORIA AVENUE
CHATSWOOD NSW 2067
Our Ref: 15884
Tel: (02) 9417 8400 Fax: (02) 9417 8337
E-mail: email@hhconsult.com.au

INTRODUCTION

This Flood Evacuation Strategy has been prepared for Opal Aged Care to supplement the Development Application for the proposed RACF at Stanley Street, Bathurst. The site is also located adjacent to Macquarie River. The proposed aged care development comprises an area of approximately 16,000 m^2, which is located in the Bathurst Regional Council LGA. The development comprises a proposed 7100 m^2 Aged Care building and associated car parking facilities.

The topography of the development site can be described as very gently sloping from the north eastern boundary to the south western boundary.



The objective of the Report is to prepare a Flood Evacuation Plan in accordance with section 9.6 of the DCP 2014.

Flood Planning Report

A flood planning report was prepared for Opal Aged Care on 3rd of November, 2015. The report outlines the compatibility of the development in the flood prone area. It is understood that the site is protected from flooding from the Macquarie River by the levee constructed along the north eastern boundary of the site. Penstocks are engaged to prevent flood waters from the river back charging upstream of the levee which is understood to be the flood level associated with the local catchment once the penstocks are engaged.

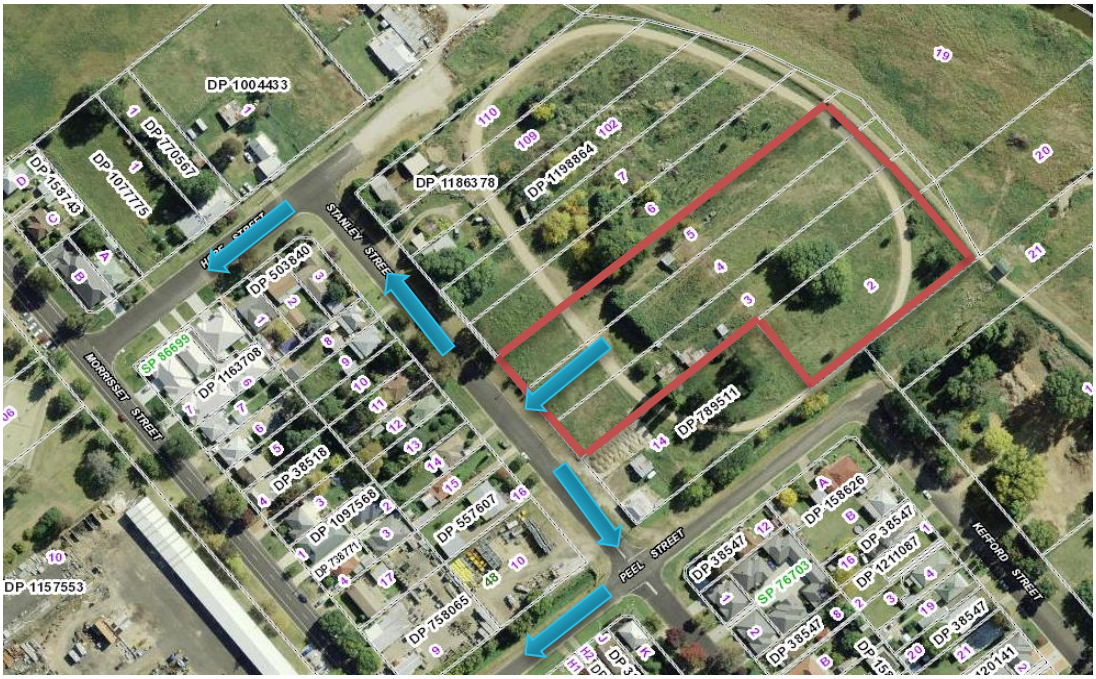
The nominated floor level of the proposed development is 651.9 which is 1.02m above the Flood Planning Level.

Flood Evacuation Plan

Based on the size of the Macquarie River catchment and the nature of rainfall patterns, it is understood that the River will take a few hours to reach its maximum flood level and that the site is protected from flooding by the levee. In addition, the floor level will be set 1.02m above the local flood level. As the occupants will be above the flooding in the first instance, evacuation from the site is not necessary.

If evacuation is required due to failure of penstocks at very worst there will be a few hours warning for a major flood. This is sufficient time to enable evacuation of the occupants and general public. Upon a flood warning, occupants that require high care or are in poor health should be moved to the nearest hospital. The effective warning time is typically used to move equipment, move stock, evacuate people and move cars from the parking. Once the Aged Care has received the flood warning it is the responsibility of the Aged Care management to start implementing the evacuation plan. This will involve a group of people (evacuation group) ensuring that the occupants leave the facility in an orderly manner.

The flood evacuation plan (FEP) is required for the proposed Aged Care to provide a strategy for dealing with the 100 year flood. There would be many hours warning for a severe flood. The key principle in the FEP is to provide an evacuation strategy from the site to a location above the flood level.
The egress route for the proposed Aged Care site is to walk towards Stanley Street and go westwards either to Hope Street or Peel Street; both streets being higher in level than Stanley Street directly adjacent the site. The route is indicated below:



A more detailed FEP would be prepared as part of the operational plan prior to the occupation phase of the development, including nomination of individual staff for emergency roles.

H&H Consulting Engineers Pty Ltd *(trading as Henry & Hymas)*

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3 November 2014

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