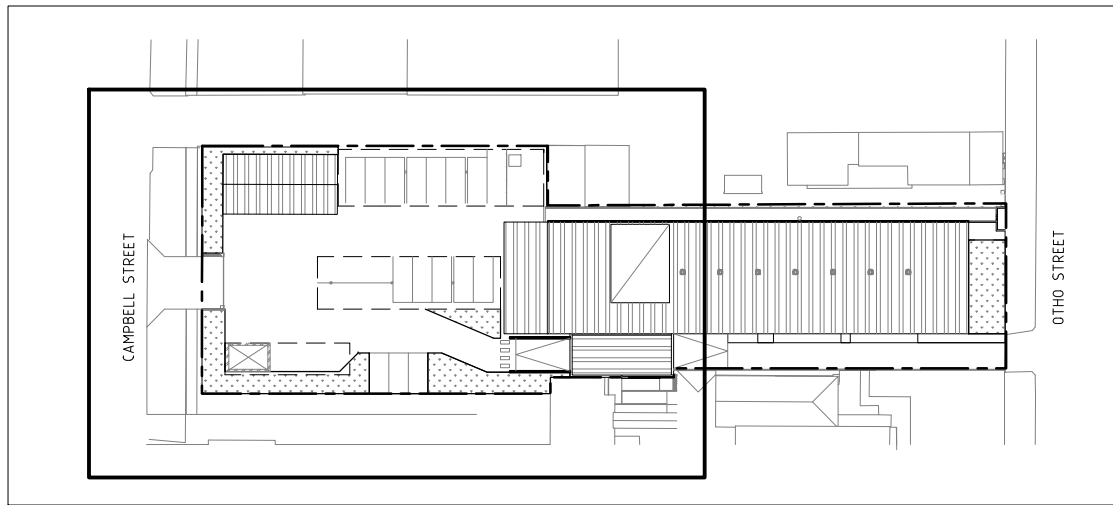


COUNCIL ASSESSMENT REPORT
DA-74/2019 - INVERELL POLICE STATION REDEVELOPMENT

ATTACHMENT 4

**WATER MANAGEMENT DRAWINGS, SEDIMENTATION AND EROSION
CONTROL PLAN AND CIVIL ENGINEERING DRAWINGS**

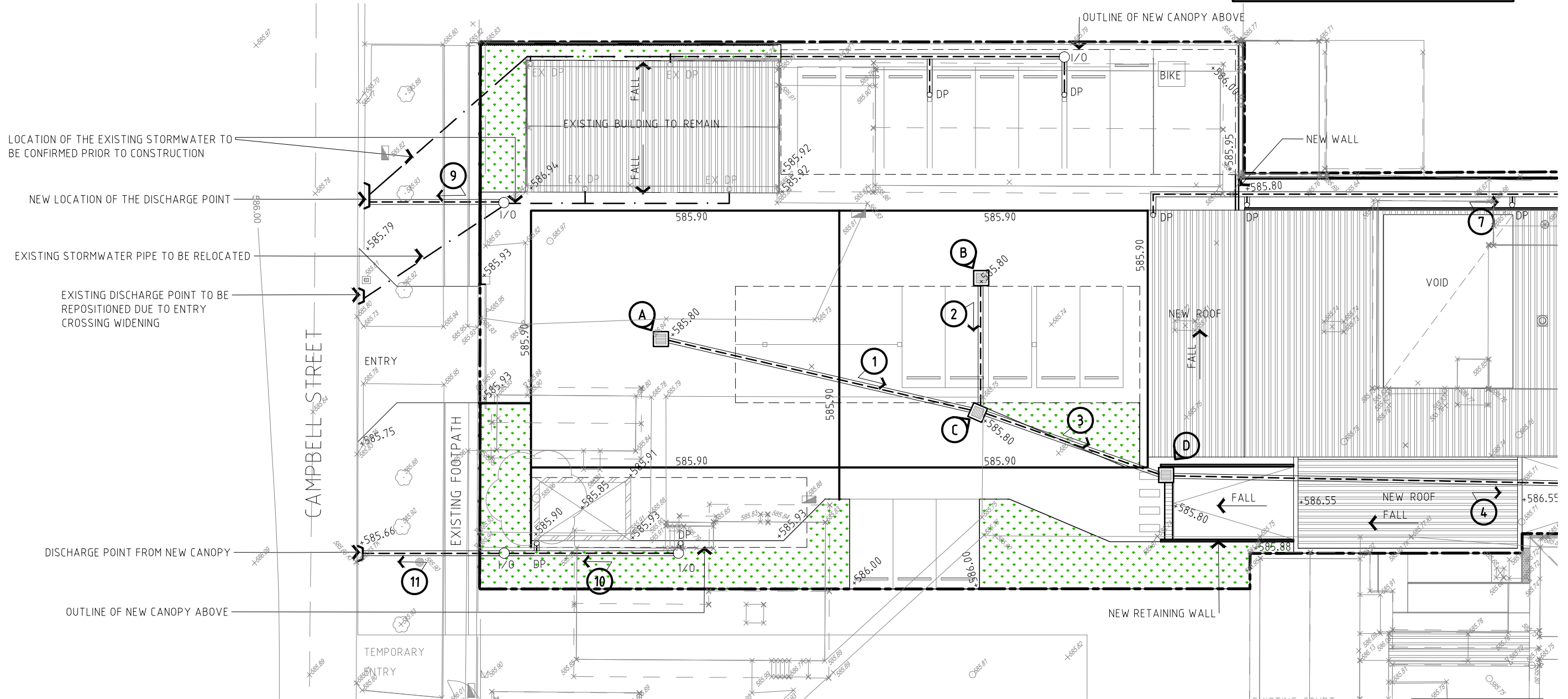




KEY PLAN
SCALE: 1:1000

LEGEND:

- PROPERTY BOUNDARY
- EXISTING SPOT LEVELS
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED LEVELS
- PROPOSED INSPECTION OPENING
- EXISTING DOWNPIPE
- PROPOSED DOWNPIPE
- PROPOSED INLET PIT
- PROPOSED JUNCTION PIT
- PROPOSED GRATED DRAIN
- EXISTING STORMWATER DRAIN
- PROPOSED STORMWATER DRAIN



CROWN DA
NOT FOR CONSTRUCTION

Revisions			
Issue	Description	Date	Chk/Int
C	DA ISSUE	24.07.2019	ES
B	DA ISSUE	19.07.2019	ES
A	DA ISSUE	08.07.2019	K.S

General Notes

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Drawing Notes

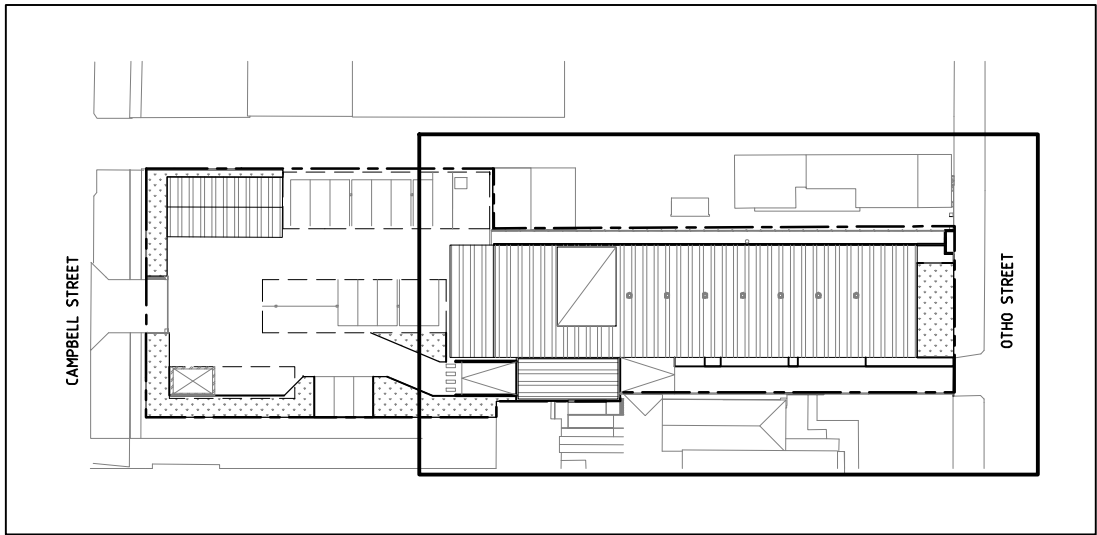
North



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Project
INVERELL POLICE STATION
Location
109 OTHO STREET, INVERELL

Scale
1:250 @A3
Drawing
STORMWATER PLAN SHEET 1 OF 2
Project Number
190077
Drawing Number
C-100
Issue
C



KEY PLAN
SCALE: 1:1000

LEGEND:

PROPERTY BOUNDARY

+37.05

EXISTING SPOT LEVELS

144.2

EXISTING CONTOURS

585.90

PROPOSED CONTOURS

+ 586.90

PROPOSED LEVELS

I/O

PROPOSED INSPECTION OPENING

EX DP

EXISTING DOWNPIPE

DP

PROPOSED DOWNPIPE

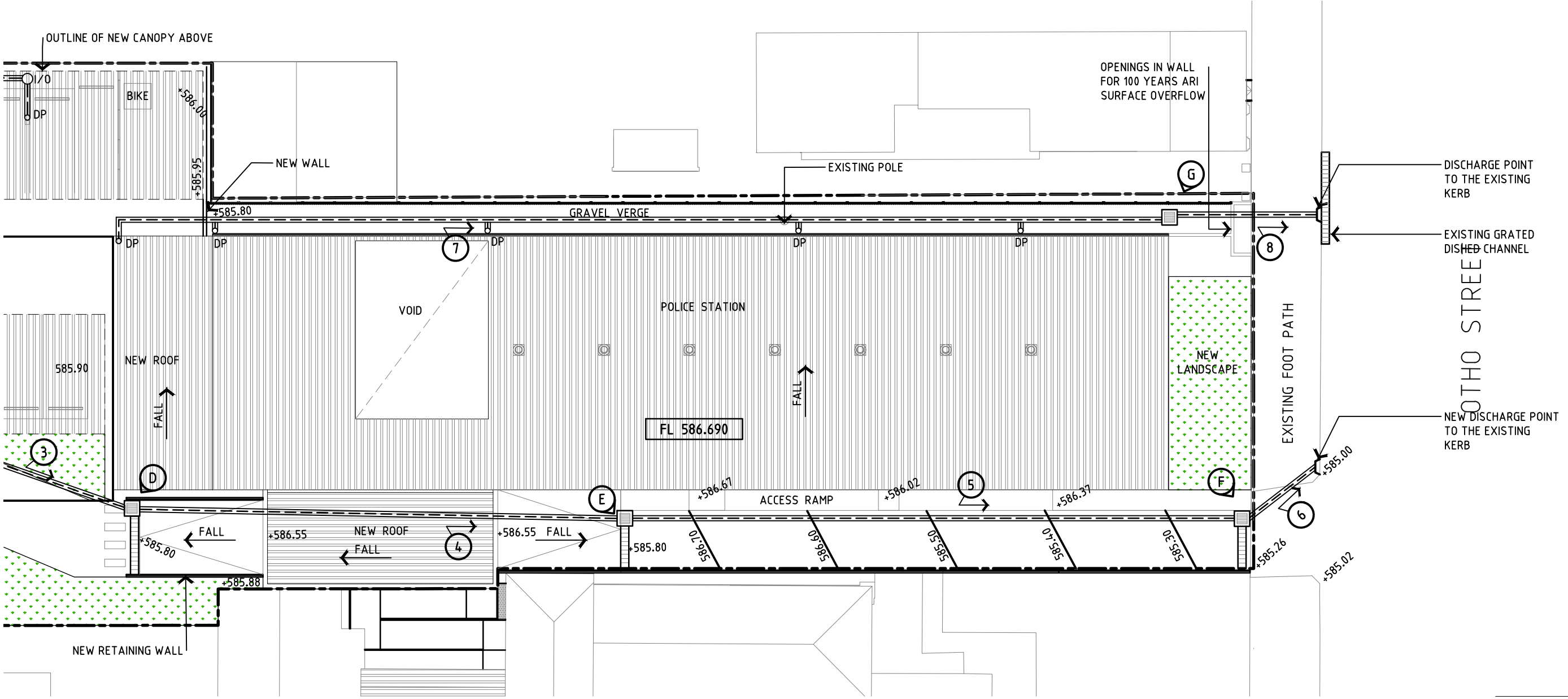
PROPOSED INLET PIT

PROPOSED JUNCTION PIT

PROPOSED GRATED DRAIN

EXISTING STORMWATER DRAIN

PROPOSED STORMWATER DRAIN



Revisions		General Notes		Drawing Notes	
A DA ISSUE		Do not scale this drawing. The drawing shows design intent only. All dimensions to be checked on site prior to construction or production. Construction details to be confirmed by contractor/manufacturer. This is a computer generated drawing. Do not amend by hand. Figure dimensions are to be used. Contact architect for clarification if dimensions are not clear. All dimensions are in millimeters. All discrepancies and omissions on site must be reported to the architect for their comments or approval prior to commencing work.			
Issue Description		08.07.2019 K.S			
		Date Chk Int			

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Project

INVERELL POLICE STATION

Location

109 OTHO STREET, INVERELL

CROWN DA
NOT FOR CONSTRUCTION

Scale
1:250 @A3

Drawing
STORMWATER PLAN SHEET 2 OF 2

Project Number
190077

Drawing Number
C-101

Issue
A

STORMWATER DISPOSAL PHILOSOPHY

1. COLLECT ALL SITE RUNOFF FROM SURFACE GRADES, SUMPS AND UNDERGROUND DRAINS PRIOR TO DISCHARGE TO KERB OUTLETS.
2. ROOF RUNOFF TO BE DIRECTED INTO SITE STORMWATER SYSTEM.
3. ON-SITE UNDERGROUND DRAINAGE HAS BEEN DESIGNED FOR 1 IN 20 YEAR FLOWS, TO CONNECT INTO COUNCIL SYSTEM VIA EXISTING AND NEW OUTFALLS.

GENERAL NOTES

1. FIT STEP IRONS TO PITS DEEPER THAN 1000 .
2. ALL GRATES TO BE WELDED CONSTRUCTION SUPPLIED COMPLETE WITH H.D. BOLTS AND FRAMES. PROVIDE FLATTENED EXPANDED METAL TO ALL GRATES
3. ALL PIT COVERS & GRATES TO BE SECURELY BOLTED DOWN.
4. ALL UPVC PIPES TO HAVE SOLVENT WELDED JOINTS.

STORMWATER NOTES

1. THIS IS A STORMWATER DRAINAGE PLAN ONLY. REFER TO ARCHITECTURAL DRAWINGS FOR ALL SETOUT INFORMATION.
2. ALL DRAINAGE LAYOUTS, LEVELS & DETAILS ARE DIAGRAMMATIC AND INDICATIVE ONLY.
3. DRAINAGE LAYOUTS SHOWN ARE DIAGRAMMATIC ONLY. NOTE ONLY MAJOR LINES ARE SHOWN.
4. ALL PIPES TO BE 150 DIA UPVC LAID AT 1.0% MIN GRADE. UPVC PIPES TO BE SOLVENT WELDED JOINTS U.N.O.
5. ALL PITS AND COVERS TO PROPRIETARY PRECAST ITEMS, COVER LEVELS TO MATCH SURFACE. ALL PITS IN ROADWAYS TO BE TO CURRENT RTA REQUIREMENTS.
6. ALL GRATED DRAINS TO HAVE BASE GRADED 1.0% MIN WITH HEEL GUARD TYPE GRATES.
7. IT IS THE BUILDERS RESPONSIBILITY TO LAY ALL PIPES IN ACCORDANCE WITH ALL RELEVANT AUTHORITY REQUIREMENTS (EG. COUNCIL, EPA, SHAOLHAVEN WATER).

STORMWATER RUNOFF CALCULATIONS

USING FORMULA Q = 0.000278 CAI
WHERE Q = DISCHARGE IN LITRES PER SECOND
C = A RUNOFF COEFFICIENT
A = CATCHMENT AREA IN SQ.M.
I = RAINFALL INTENSITY IN MILLIMETRES PER HOUR
I₅ = 180 MM/HR FOR 20 YEAR RETURN PERIOD

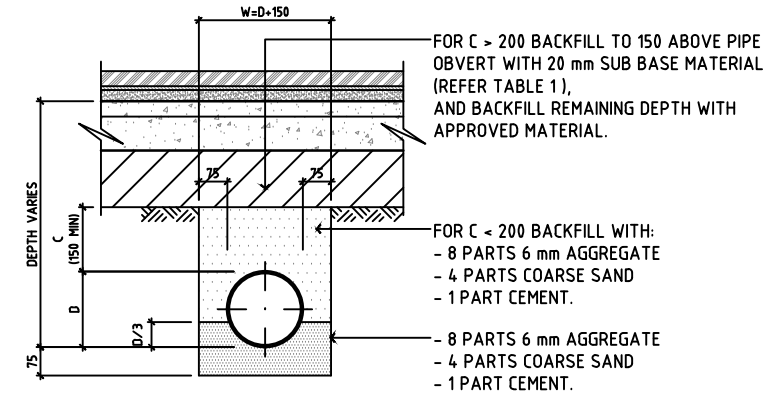
LINE	AREA OF CATCHMENT (SQM)	FLOW FROM AREA (L/s)	TOTAL FLOW IN THE PIPE (L/s)	SIZE MIN. (mm)
1	340	16.16	16.16	Ø 150@1:180
2	200	9.51	9.51	Ø 150@1:180
3	260	12.36	38.03	Ø 225@1:200
4	118	5.82	43.85	Ø 225@1:200
5	84	4.15	48.00	Ø 225@1:200
6	126	5.99	53.99	Ø 225@1:140
7	840	42.00	42.00	Ø 225@1:200
8	-	-	42.00	Ø 225@1:200
9	310	15.51	15.51	Ø 150@1:100
10	63	3.30	3.30	Ø 150@1:100
11	-	-	3.30	Ø 150@1:100

LINE SCHEDULE

TAG	UPSTREAM INVERT	SIZE	MATERIAL	LENGTH (m)	GRADE	DOWNSTREAM INVERT	NOTES
1	585.35	150	UPVC	18.0	1:180	585.25	
2	585.35	150	UPVC	7.0	1:170	585.25	
3	585.25	225	UPVC	11.0	1:183	585.19	
4	585.19	225	UPVC	28	1:200	585.05	
5	585.05	225	UPVC	32.0	1:213	585.90	
6	585.90	200x100	RHS	9.0	1:180	584.85	2xRHS
7	585.25	225	UPVC	56.5	1:157	584.90	
8	585.90	200x100	RHS	9.0	1:112	584.82	2xRHS
9	TBC	200x100	RHS	8.0	TBC	585.75	1xRHS
10	585.82	150	UPVC	10.0	1:143	585.75	
11	585.75	200x100	RHS	9.0	1:100	585.66	1xRHS

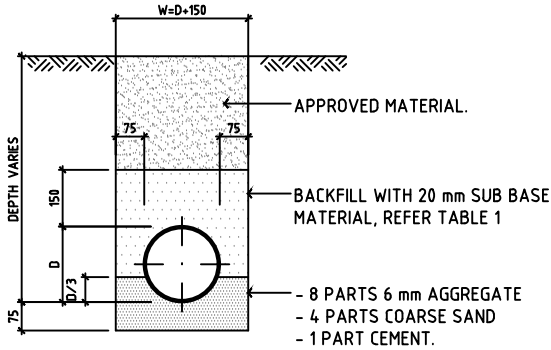
NEW PIT SCHEDULE

TAG	TYPE	SIZE	RL TOP	IL	COVER	NOTES
A	INLET	450x450	585.80	585.35	CLASS D	
B	INLET	450x450	585.80	585.35	CLASS D	
C	INLET	450x450	585.80	585.25	CLASS D	
D	GRATED TRENCH	ACO S 100 K	585.87	585.19	CLASS D	
E	GRATED TRENCH	ACO S 100 K	585.80	585.05	CLASS D	ACO OR SIMILAR
F	GRATED TRENCH	ACO S 100 K	585.25	584.90	CLASS D	ACO OR SIMILAR
G	INLET	450x450	585.30	585.00	CLASS B	ACO OR SIMILAR



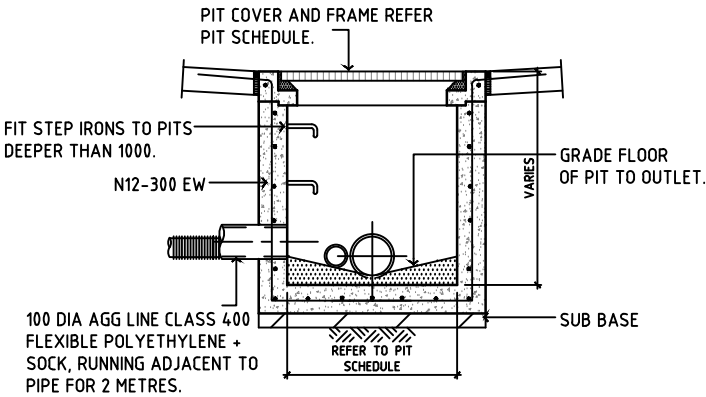
STORMWATER PIPE BEDDING DETAIL (UNDER PAVEMENT)

SCALE 1:20



STORMWATER PIPE BEDDING DETAIL (UNDER GROUND)

SCALE 1:20



INLET PIT (JUNCTION PIT SIMILAR)

SCALE 1:40

Revisions	General Notes
A DA ISSUE Issue Description	08.07.2019 K.S Date Chk Int

Drawing Notes
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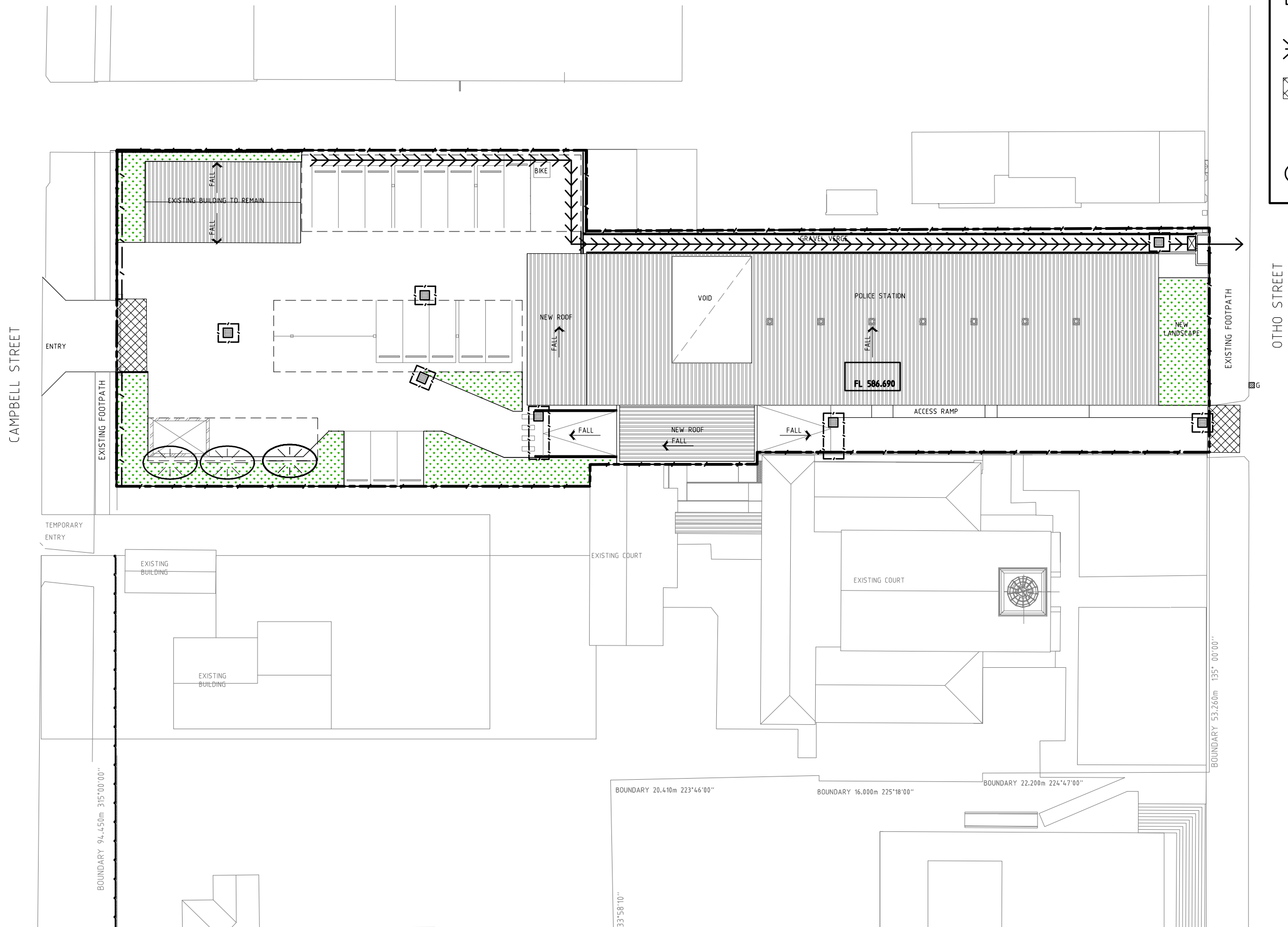


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Project
INVERELL POLICE STATION
Location
109 OTHO STREET, INVERELL

CROWN DA
NOT FOR CONSTRUCTION

Scale
Drawing STORMWATER SCHEDULES AND DETAILS Project Number Drawing Number Issue 190077 C-110 A



LEGEND:

SEDIMENT FENCE

SEDIMENT TRAP

G

GRAVEL BAG

SWALE

CONSTRUCTION ENTRY/EXIT

HAY BALE FENCE/WALL (TYP. 2 BALES WIDE)

STOCK PILE LOCATION

Revisions			
Issue	Description	Date	Chk/Int
C	DA ISSUE	24.07.2019	K.S.
B	DA ISSUE	19.07.2019	K.S.
A	DA ISSUE	08.07.2019	K.S.

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Drawing Notes

North

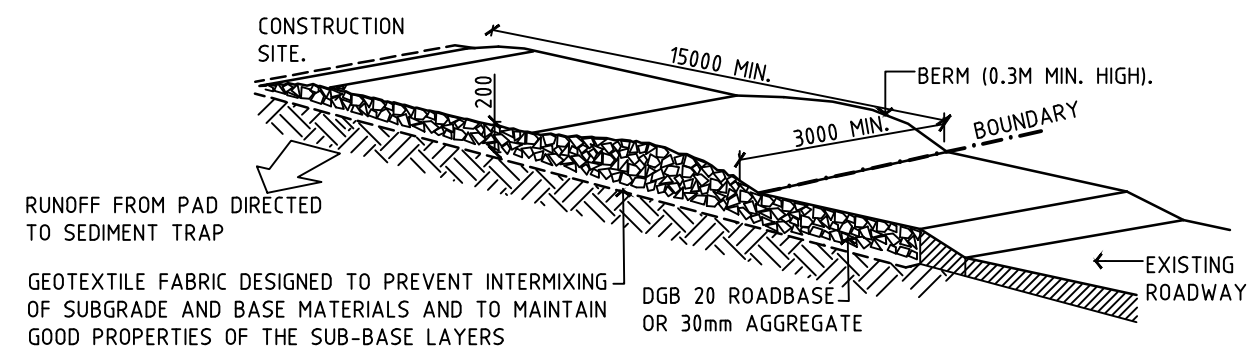


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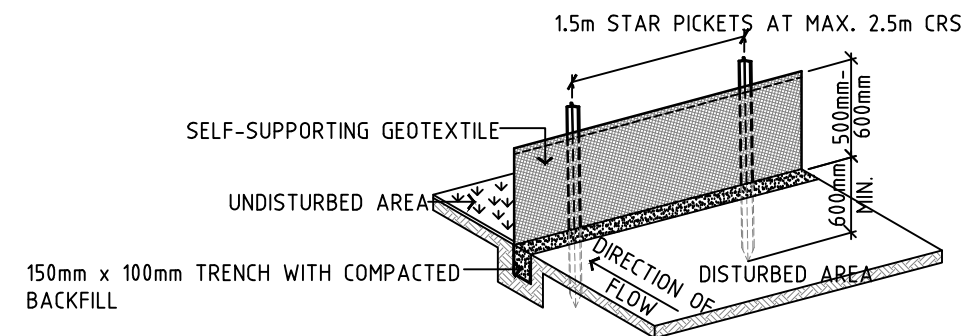
Project
INVERELL POLICE STATION
Location
109 OTHO STREET, INVERELL

CROWN DA
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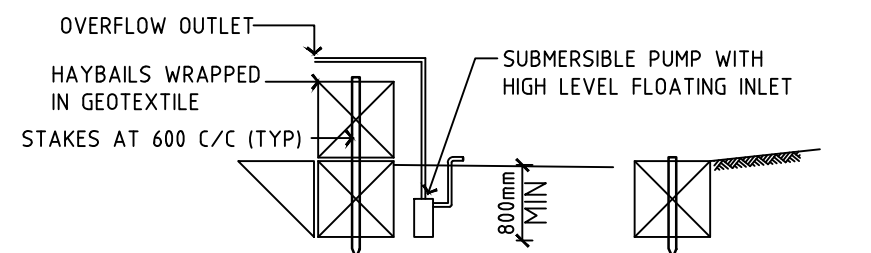
Scale
1:400 @A3
Drawing
EROSION AND SEDIMENT
Project Number
190077
Drawing Number
C-120
Issue
C



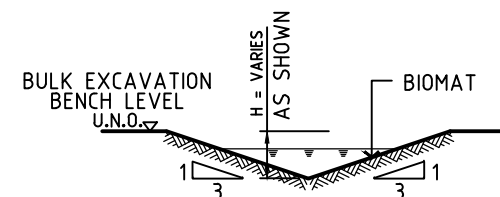
TEMPORARY CONSTRUCTION EXIT



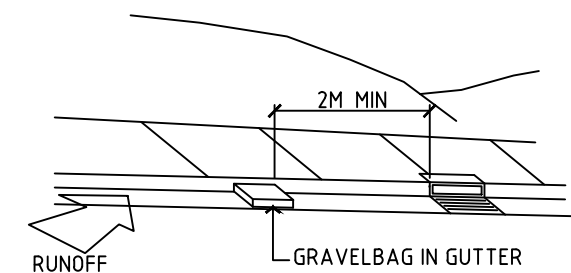
SEDIMENT FENCE



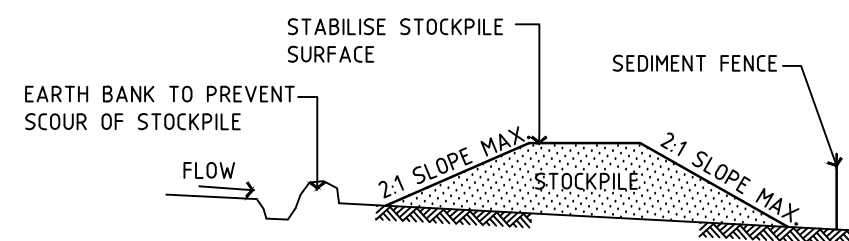
HAY BALE SILT RETENTION DAM DETAIL



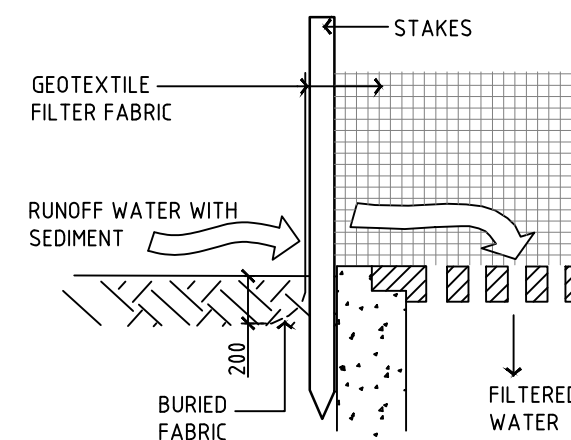
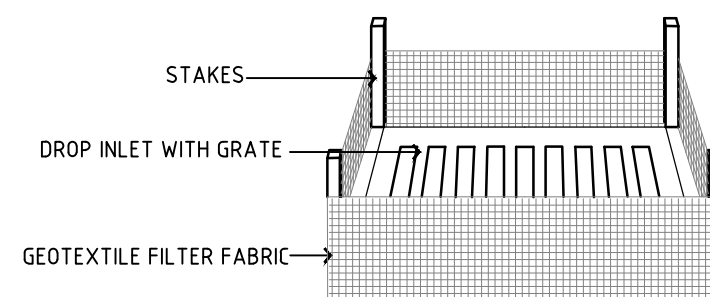
PERMANENT "VEE" DRAIN
MIN GRADE 1%



GRAVELBAG KERB SEDIMENT TRAP



BUILDING MATERIAL STOCKPILES



SEDIMENT TRAP TO STORMWATER SUMP

Revisions	General Notes	Drawing Notes
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Project
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Location
109 OTHO STREET, INVERELL

CROWN DA
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Scale
NTS @A3
Drawing
EROSION AND SEDIMENT CONTROL DETAILS
Project Number
190077
Drawing Number
C-121
Issue
A