



2017

Newmill Flood Protection Scheme Operation & Maintenance Manual



Rev	Date	Version Description	Prepared	Checked	Approved
1.0	August 2017	First Issue	GD	FK	FK

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1 INTRODUCTION

The Moray Council completed construction of a flood protection scheme to protect properties in the village of Newmill. The Scheme was delivered in two phases. Phase 1 consists of a network of ditches and culverts to the east of Hill Street and was completed in 2012. Phase 2 consists of a network of ditches and culverts to the west of Hill Street which discharge to a Cascade at the west end of Back Street. The cascade discharges into a settlement chamber to reduce the velocity and drop out sediment before entering the Burn of Kinminitie. New flood walls have been constructed to protect properties at Low Road. A new box culvert has replaced the Bridge of Kinminitie to increase capacity. This document is a guide to the operation and maintenance of both phase of Newmill Flood Protection Scheme. A location plan is shown on Figure 1.

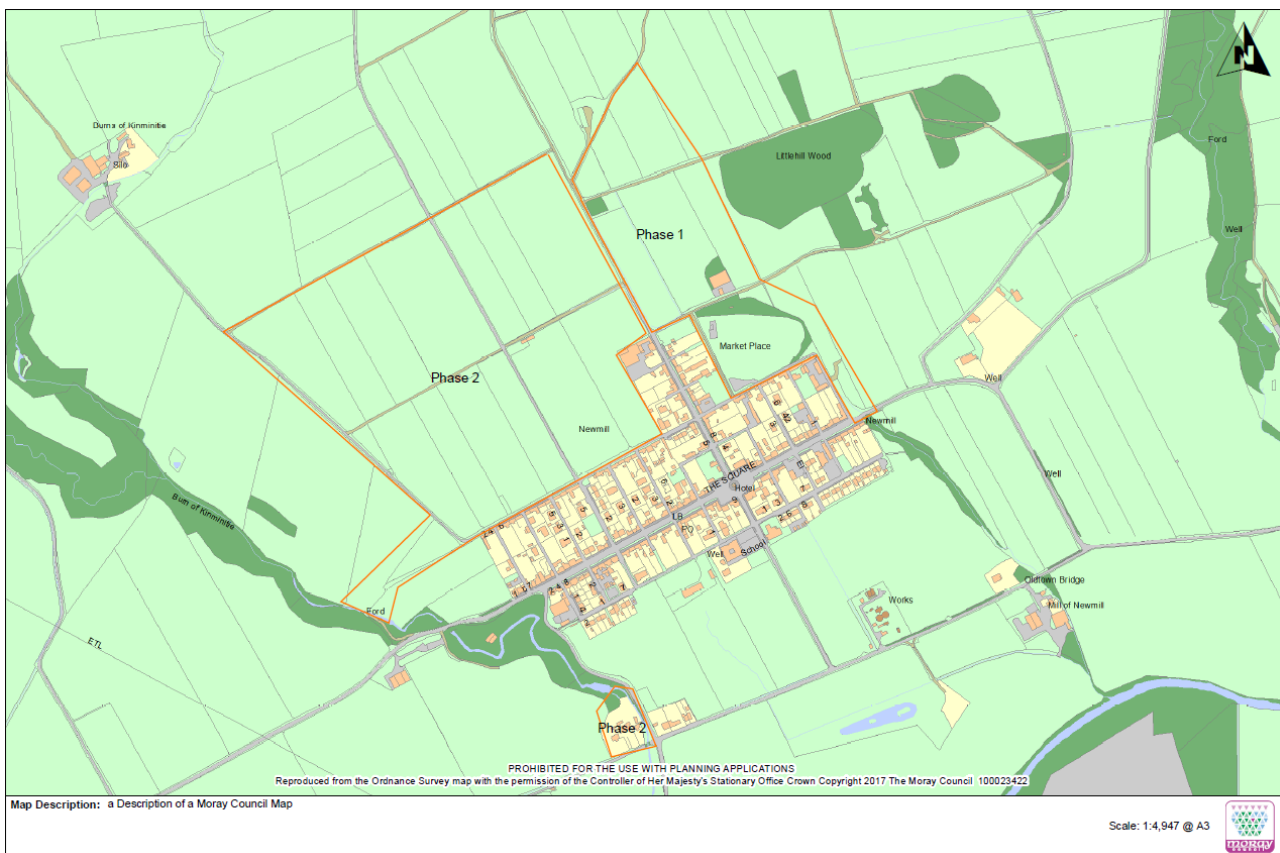


Figure 1

2 OPERATING THE SCHEME

The principles of operating the Newmill FPS are:

- The Scheme is design to mitigate flood risk from a 1 in 200 year flood event including a 20% allowance for climate change
- The Scheme requires no interactive operation.
- Operational task should be minimised.

- Operational tasks must be safe and any hazards and risk identified and mitigated through a risk assessment process prior to being undertaken
- Monitoring of the Scheme performance is required to manage the residual risk (see Section 6)

3 MONITORING DURING A FLOOD EVENT

The scheme is designed to be dry most of the time and only convey water during periods of heavy or prolonged rainfall.

Monitoring of the Scheme should commence when the following criteria are met:

- There has been heavy and/or persistent rainfall for approximately 24 hours; or;
- There has been notification from the land owners and/or members of the public that the scheme is starting to operate.

Once it has been decided that the Scheme is operating the following actions should be taken:

- Observe water levels in ditches and at culverts
- Observe water levels in Cascade
- Observe water levels at flood wall on Low Road

There are a number of risks associated with monitoring activities, these include:

- No access should be taken to Cascade during a flood event
- Access from public open space or roads/track only
- No access should be taken during the hours of darkness or poor visibility
- The road / track network may have live traffic and due care should be taken to observe from safe vantage points only.

4 POST EVENT INSPECTION

Following any flood event the ditch networks, culverts, settlement chambers, cascade and flood wall should be inspected. This inspection should establish any damage caused during the flood event, identify any repairs required to repair damage or clear any debris which could cause a blockage in future flood events. The post event inspection should be carried out by a competent person with experience in inspecting flood management assets.

5 ROUTINE MAINTENANCE INSPECTIONS

A routine maintenance inspection should be carried out every 3 months. This inspection should:

- Ensure the scheme is always ready for operation
- Ensure that all elements of the scheme do not present health and safety hazards to the general public
- Ensure the ditch network, culvert, settlement chambers and cascade are free of debris which could affect performance during a flood event

- Identify new maintenance works require, or identify a change in frequency of cyclical tasks (such as grass cutting), and provide feedback or any previous maintenance works undertaken
- Ensure all maintenance works are recorded for future reference
- Review effectiveness of previous maintenance activities

6 RESIDUAL FLOOD RISK

The Scheme has been design to manage flood risk from a 1 in 200 year flood event including a 20% allowance for climate change. During more extreme flood event there are a number of residual risk such as:

- During an excedance event the ditch network in the fields could be overtopped which could result in surface water flooding in the village.
- Discharge to the Burn of Kinminitie is control by the settlement structure at the foot of the Cascade. During an exceddance event overtopping of the settlement structure could lead to localised ponding in the adjacent fields.

7 INDICATIVE METHOD TO CLEAR SETTLEMENT CHAMBERS

The Scheme has two settlement chambers, detailed consideration of a safe system of work to clear these chambers should be consider prior to undertaking any clearance works. In order to aid the preparation of a safe system of work the following information is provided:

STRUCTURE DESCRIPTION:

Phase 1 – Stilling Tank

The structure is a concrete stilling tank receives water from a network of field ditches above. Refer to drawing CAP08009/04

A galvanised metal trash screen measuring 2.9 x 1.3 x 0.05m and weighing approx. 160kg, covers approx. half of the opening. The trash screen sits on angle brackets which are bolted to the concrete walls.

A 1.0m high demountable guard rail surrounds the opening. A hex key is required for demounting, key sizes - (4.76mm, 6.35mm & 7.94mm).

The stilling tank is drained by a 900mm dia pipe which runs below the adjacent track.

Phase 2 – Settlement Chamber

The structure is a concrete stilling tank which receives water from the cascade above and discharges to the Burn of Kinminitie via twin box culverts. Refer to drawing CAP08019/203.

A 1.0m high demountable guard rail surrounds the opening.

Potential risks:

The potential risks identified are as listed below.

- i. Trips, slips & falls.
- ii. Drowning.
- iii. Confined spaces (suffocation).
- iv. Weils disease.
- v. Crushing.

Safe System of Working (SSoW) may include:

- At least two operatives are required to allow this job to be completed safely.
- All operatives must read and understand this document.
- All operatives must be competent and suitably trained to complete the task asked of them.
- At all times at least one operative is required to remain out with the structure to raise the alarm if required.

Consideration should be given to an appropriate order of works, which may follow the process outlined below:

- a. Test air quality.
 - i. Prior to any personnel entering the structure, the air quality must be tested using a suitable gas monitor.
- b. Ensure outfall at headwall H3 is clear of any obstruction.
 - i. The outfall needs to remain clear so that a build-up of water and or gasses cannot occur.
- c. Remove trash screen (*Phase 1 – Stilling Tank only*).
 - i. Due to the position and weight of the screen, a telescopic handler is required to lift the trash screen. Suitable lifting straps should be sourced to suit the size and weight of the screen (noted in section 1 above).
- d. Remove guard rail.
 - i. Remove the guard rail from one side of the structure (adjacent to ladder).
 - ii. Key sizes required; 4.76mm AF, 6.35mm AF & 7.94mm AF.
- e. Place mini skip (1-2m³).
 - i. A telescopic handler should be used to manoeuvre the mini skip.
 - ii. Do not lower/raise the mini skip whilst operatives are within the structure.
 - iii. Ensure the placement of the mini skip does not block the outflow.
- f. Excavate deposited material.
 - i. A mechanical excavator with sufficient reach to carefully excavated material and fill skip.
- g. Remove material (sediment & vegetation).
 - i. The excavated material must be removed and disposed in accordance with landfill regulations.

- h. Replace guard rails (hand tighten fixings).
 - i. Key sizes required; 4.76mm AF, 6.35mm AF & 7.94mm AF.
- i. Replace trash screen (*Phase 1 – Stilling Tank only*).
- j. A provision to allow operatives to wash their hands after working must be allowed for. This is to reduce the risk of catching Weils disease.

In an emergency.

In the event of an emergency the nearest public telephone box is situated on Main Street, Newmill.

APPENDIX A

As Built Drawings

As Built Drawing List

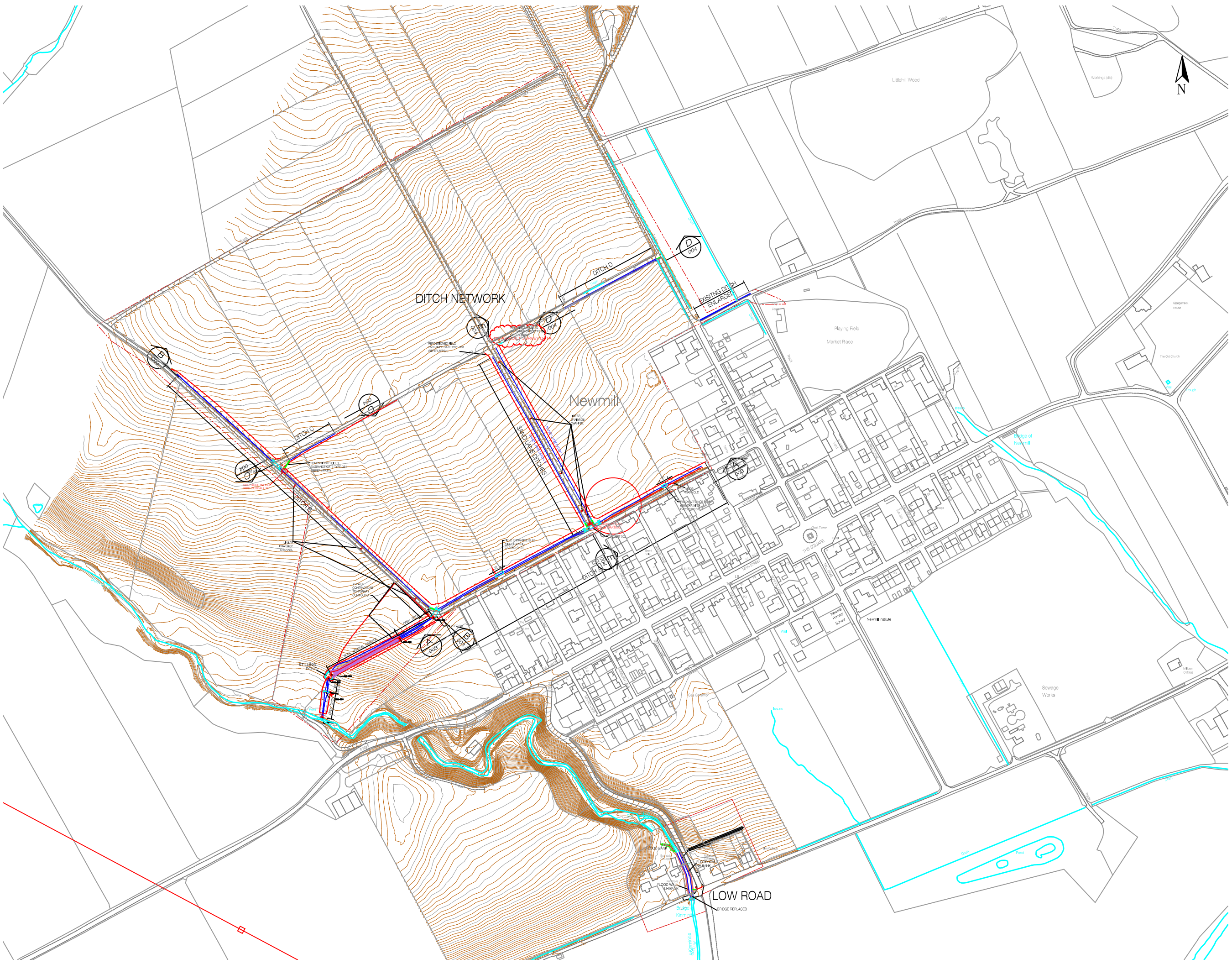
DRAWING NUMBER	TITLE	REVISION
CAP08019/001	General Arrangement	C
CAP08019/002	Utilities Plan	C
CAP08019/100	Ditch Network: General Arrangement	C
CAP08019/101	Ditch Network: Details	C
CAP08019/102	Ditch Network: Long Sections	C
<i>CAP08019/103</i>	<i>Combined with drawing CAP08019/102</i>	-
CAP08019/104	Ditch Network: Culverts 01, 02 & 03 Details	C
CAP08019/200	Cascade: General Arrangement	C
CAP08019/201	Cascade: Longitudinal Section	C
CAP08019/202	Cascade: Cross Sections and Details	C
CAP08019/203	Cascade: Concrete Sump Details	D
CAP08019/204	Cascade: Concrete Sump Reinforcement Details	B
CAP08019/300	Low Road: General Arrangement	C
CAP08019/301	Low Road: Bridge of Kinminitie Details	C
CAP08019/302	Low Road: Flood Wall Details Sheet 1	D
CAP08019/304	Low Road: Flood Wall Reinforcement Details 1 of 2	E
CAP08019/305	Low Road: Flood Wall Reinforcement Details 2 of 2	D
CAP08019/306	Low Road: Flood Wall Gabion Transistion	B

NOTES

GENERAL

1. All dimensions in millimetres unless noted otherwise.
2. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
3. All co-ordinates are to Ordnance Survey data unless noted otherwise.

- SURFACE WATER DITCH
- NEW FENCE



C	AS BUILT	PCE	GD	FEB 2017
B	CONSTRUCTION ISSUE	GD	DH	March '16
A	TENDER ISSUE	GD	DH	Oct '15
Rev.	Amendment Details	By	Ctd	Date

THE MORAY COUNCIL
 DIRECT SERVICES - CONSULTANCY
 PO BOX 6760
 ELGIN IV30 9BX
 TEL: 01343 543451

**NEWMILL FLOOD ALLEVIATION
 SCHEME PHASE 2**

GENERAL ARRANGEMENT

Drawn:	GD	Checked:	DH	Issued for:	AS BUILT
Scales at A1:	1:2000	Date:	Oct 2015	Revision:	C
Drawing Number:	CAP08019 001				



NOTES

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- BT OVERHEAD
- BT UNDERGROUND
- SCOTIA GAS LPM
- SCOTIA GAS MPM
- SCOTTISH WATER SEWER
- SCOTTISH WATER WATERMAIN
- SCOTTISH WATER UNKNOWN TYPE
- SSE OVERHEAD
- SSE UNDERGROUND
- SSE UNDERGROUND
- STREET LIGHTING

NB: POSITIONS OF ALL SERVICES ARE APPROXIMATE.

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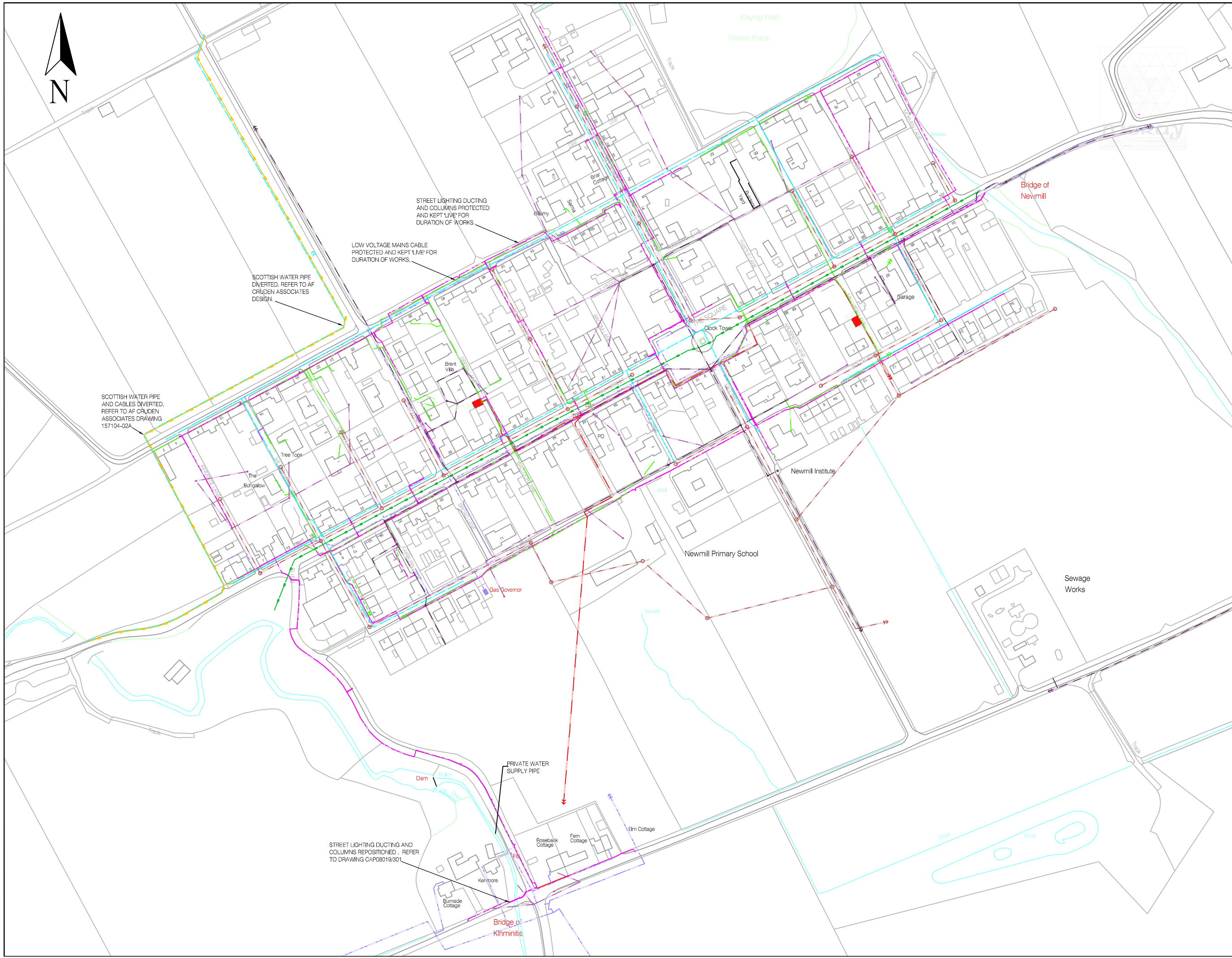
NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2



UTILITIES PLAN

Drawn:	GD	Checked:	DH	Issued for:	AS BUILT
Scales at A1:	1:1250	Date:	October 2015		

Drawing Number:	CAP08019 002	Revision:	C
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STREET LIGHTING DUCTING AND COLUMNS PROTECTED AND KEPT LIVE FOR DURATION OF WORKS.

LOW VOLTAGE MAINS CABLE PROTECTED AND KEPT LIVE FOR DURATION OF WORKS.

SCOTTISH WATER PIPE DIVERTED, REFER TO AF CRUDEN ASSOCIATES DESIGN.

SCOTTISH WATER PIPE AND CABLES DIVERTED, REFER TO AF CRUDEN ASSOCIATES DRAWING 157104-02A.

PRIVATE WATER SUPPLY PIPE

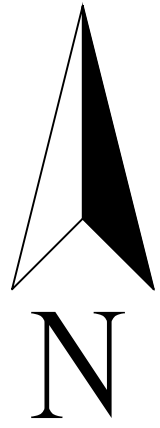
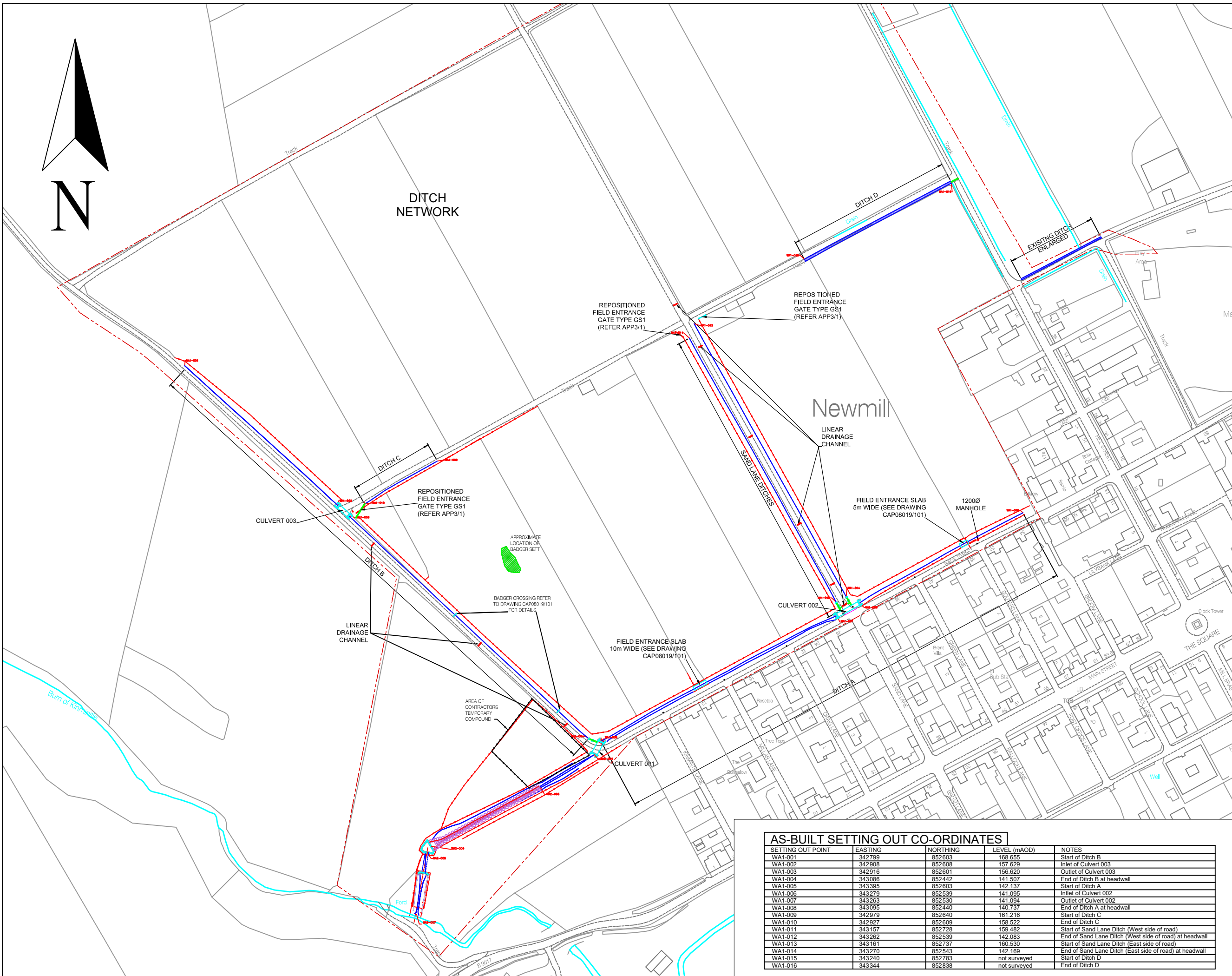
STREET LIGHTING DUCTING AND COLUMNS REPOSITIONED, REFER TO DRAWING CAP08019/001

NOTES

GENERAL

1. All dimensions in millimetres unless noted otherwise.
2. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
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- - - - - LIMIT OF LAND AFFECTED BY OPERATIONS
- SURFACE WATER DITCH
- · - · - TYPE F7 FENCING (REFER SPECIFICATION APPENDIX 3/1)



C	AS BUILT	PCE	GD	FEB 2017
B	BADGER CROSSINGS ADDED. CONSTRUCTION ISSUE	GD	DH	March '16
A	TENDER ISSUE	GD	DH	Oct '15
Rev.	Amendment Details	By	Chk	Date

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**NEWMILL FLOOD ALLEVIATION
 SCHEME PHASE 2**

**DITCH NETWORK
 GENERAL ARRANGEMENT**

Drawn: **GD** Checked: **DH** Issued for: **AS BUILT**
 Scales at A1: **1:1000** Date: **Oct 2015**
 Drawing Number: **CAP08019 100** Revision: **C**
 MORAY COUNCIL. ALL RIGHTS RESERVED

SETTING OUT POINT	EASTING	NORTHING	LEVEL (mAOD)	NOTES
WA1-001	342799	852603	168.655	Start of Ditch B
WA1-002	342908	852608	157.629	Inlet of Culvert 003
WA1-003	342916	852601	156.620	Outlet of Culvert 003
WA1-004	343086	852442	141.507	End of Ditch B at headwall
WA1-005	343395	852603	142.137	Start of Ditch A
WA1-006	343279	852539	141.095	Inlet of Culvert 002
WA1-007	343263	852530	141.094	Outlet of Culvert 002
WA1-008	343095	852440	140.737	End of Ditch A at headwall
WA1-009	342979	852640	161.216	Start of Ditch C
WA1-010	342927	852609	158.522	End of Ditch C
WA1-011	343157	852728	159.482	Start of Sand Lane Ditch (West side of road)
WA1-012	343262	852539	142.083	End of Sand Lane Ditch (West side of road) at headwall
WA1-013	343161	852737	160.530	Start of Sand Lane Ditch (East side of road)
WA1-014	343270	852543	142.169	End of Sand Lane Ditch (East side of road) at headwall
WA1-015	343240	852783	not surveyed	Start of Ditch D
WA1-016	343344	852838	not surveyed	End of Ditch D

GENERAL

1. This drawing read in conjunction with all other relevant drawings and the Specification.
2. The Project Manager must be informed of any variations between these drawings and the actual details found on site prior to work starting.
3. The Specification and details must not be altered without written approval of the Project Manager.
4. The Contractor will provide the Project Manager with detailed Method Statements for all elements of the Works including Plant, Equipment, and Temporary Works necessary for the safe execution of the Works.
5. All materials and works must be protected from adverse weather conditions until fully cured. Timber must be kept dry at all times.
6. All materials and Works must be in accordance with current British Standards or equivalent European Standards.
7. All dimensions in millimetres unless noted otherwise.
8. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
9. All co-ordinates are to Ordnance Survey data unless noted otherwise.
10. All structural steelwork is CE marked in accordance with BS EN 1090-1 : 2009

CONCRETE

11. All concrete produced and placed in accordance with BS 8500-1, BS 8500-2 and BS EN 206-1.
12. Concrete in accordance with BS 8500-1, with the following requirements:
 - Designed mix conforming to BS 8500-2
 - Compressive strength class C28/35
 - Max w/c ratio 0.45; min cement content 360kg/m³
 - Cement types III/B, IV/B-V
 - Max aggregate size 20mm
13. Precast concrete culvert units designed to BS EN 1992 Eurocode 2: Part 2 - Concrete Bridges, BS EN 1991 Eurocode 1: Part 2 - Traffic Loads on Bridges, BS EN 13369 - precast concrete
14. Concrete exposure classes related to environmental conditions XD2 to BS 8500-1/BS EN 206-1 with minimum 50mm cover to reinforcement.
15. Traffic load: Load Model 1, Load Model 2 & Load Model 3 equivalent to SV80 (BD86/07) to BS EN 1991-2 & NA to BS EN 1991-2.
16. Refer to Specification Appendix 17/1.

CJ = CONSTRUCTION JOINT
EJ = EXPANSION JOINT

WATERPROOFING

16. Waterproofing a permitted BBA product and be hot applied. Refer to Specification appendix 20/1.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services confirmed on site prior to any excavation including private field drainage.
- The Contractor to take precautions against Giant Hogweed and Japanese Knotweed if present on the site.

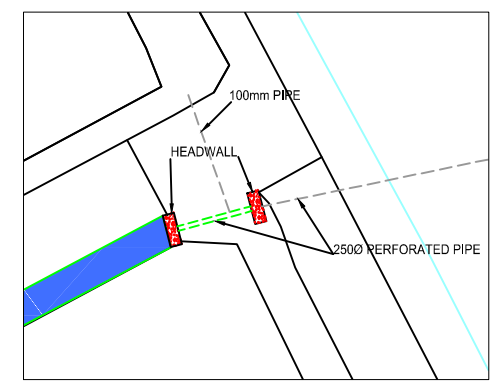
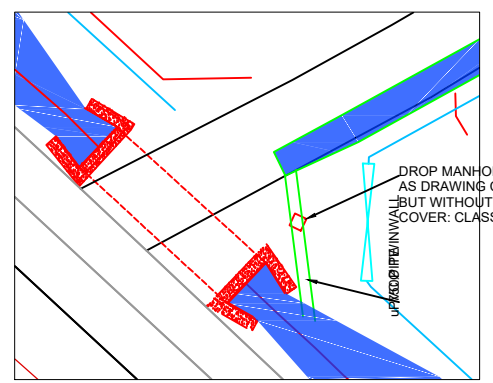
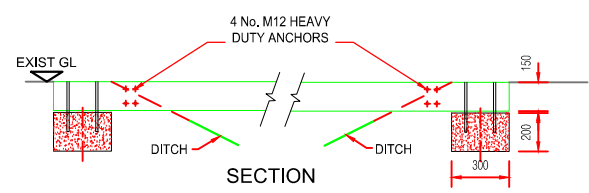
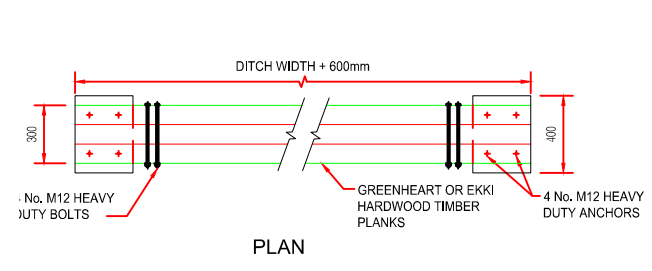
C	AS BUILT	PCE	GD	FEB 2017
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A	TENDER ISSUE	GD	DH	Oct '15
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NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2

DITCH NETWORK DETAILS

Drawn:	GD	Checked:	DH	Issued for:	AS BUILT
Scales at A1:	AS SHOWN	Date:	Oct 2015		
Drawing Number:	CAP08019-101			Revision:	C
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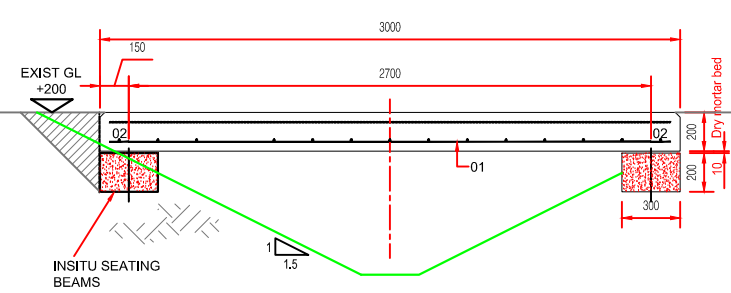
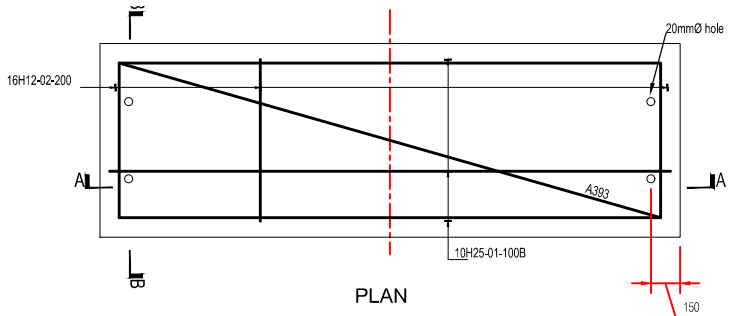
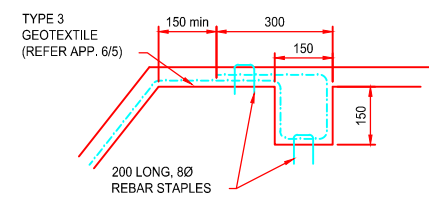
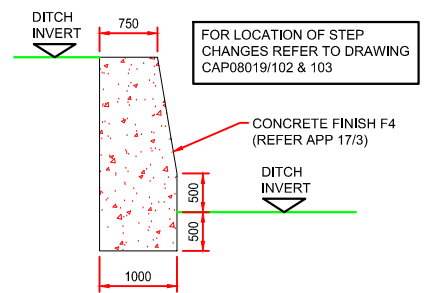
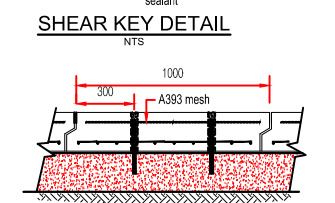
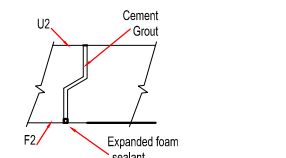


MEMBER	BAR MARK	TYPE & SIZE	No MEMBERS	No BARS IN EACH	TOTAL No	LENGTH OF EACH BAR	SHAPE	DIM A
SLAB	01	H25	12	10	120	2900	00	2900
SLAB	02	H12	12	16	192	900	00	900

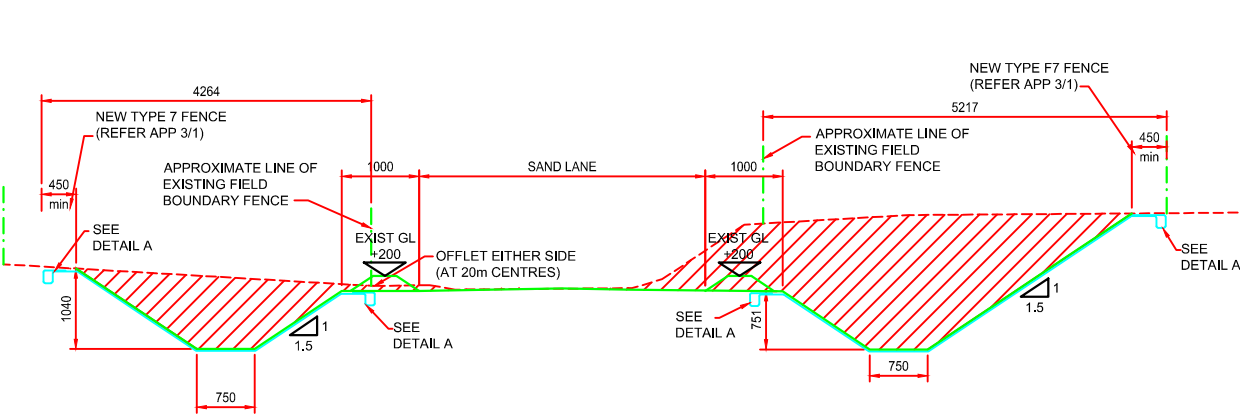
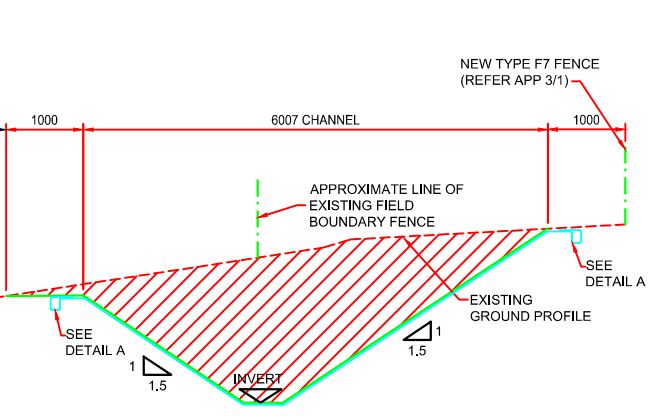
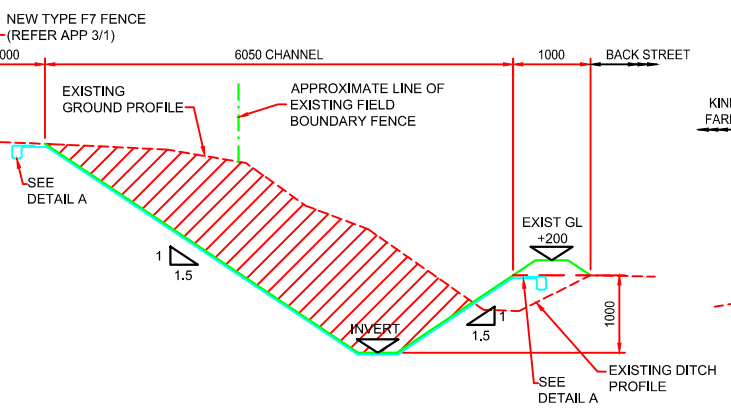
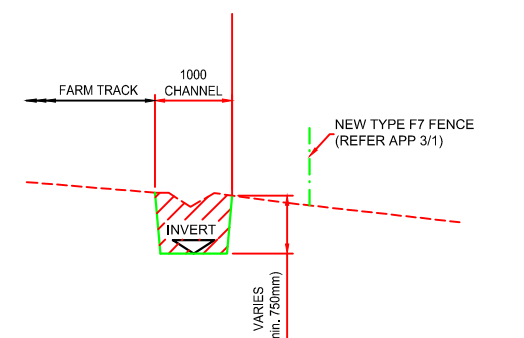
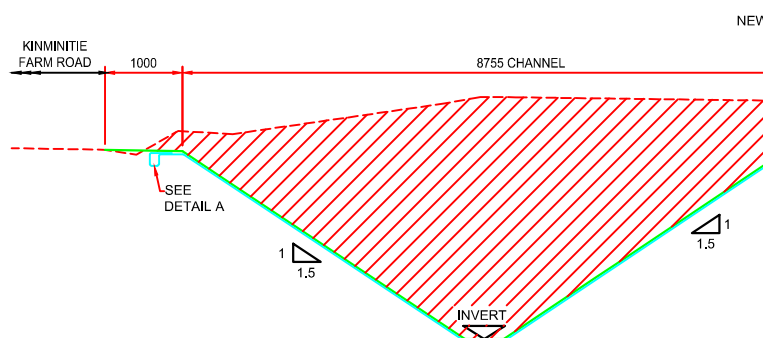
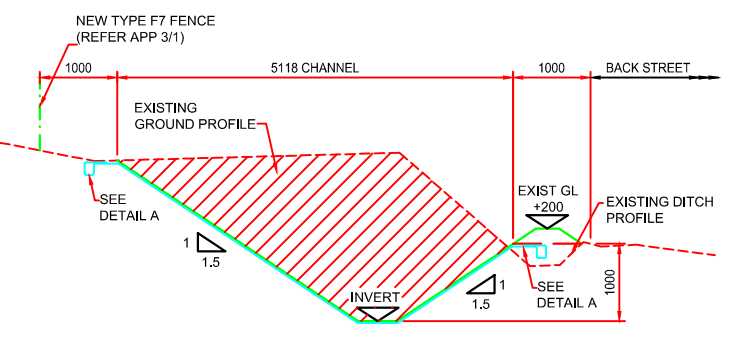
BAR SCHEDULE

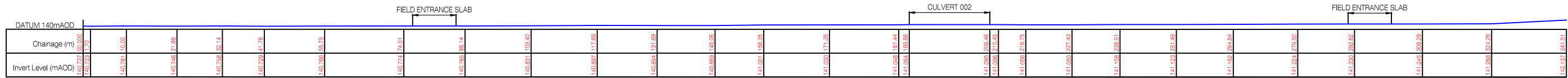
CONCRETE NOTES FOR ENTRANCE SLAB ONLY

1. LIFTING EYES PROVIDED TO SUIT THE PRECAST MANUFACTURER'S REQUIREMENTS, ADDITIONAL REINFORCEMENT REQUIRED FOR HANDLING THE UNITS THE RESPONSIBILITY OF THE PRECAST MANUFACTURER.
2. CONCRETE IN ACCORDANCE WITH BS 8500-1:2006 WITH THE FOLLOWING REQUIREMENTS:
 - 2.1. DESIGNED MIX CONFORMING TO BS8500-2
 - 2.2. COMPRESSIVE STRENGTH CLASS C35/45
 - 2.3. MAX w/c RATIO 0.5; MIN CEMENT CONTENT 340KG/M³
 - 2.4. CEMENT TYPES: ALL IN TABLE A.6
 - 2.5. MAX AGGREGATE SIZE: 20mm
 - 2.6. NOMINAL COVER TO REINFORCEMENT 45mm
3. STEEL REINFORCEMENT TO THE REQUIREMENTS OF BS EN 1992-1-1:2005, CUT AND BENT IN ACCORDANCE WITH BS EN 1992-1-1:2005.
4. ABBREVIATIONS:
 - 4.1. NF - NEAR FACE
 - 4.2. FF - FAR FACE
 - 4.3. T - TOP
 - 4.4. B - BOTTOM
5. ALL FORMED SURFACES F2; UNFORMED SURFACES U2.

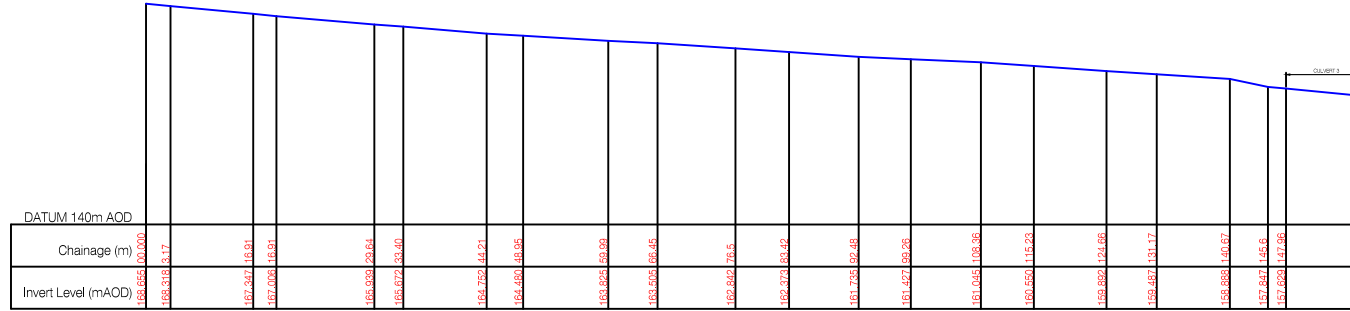


FIELD ENTRANCE SLAB DETAILS
Scale 1:20

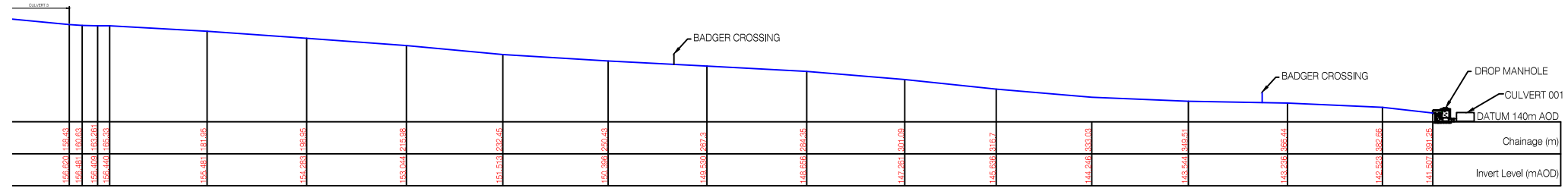




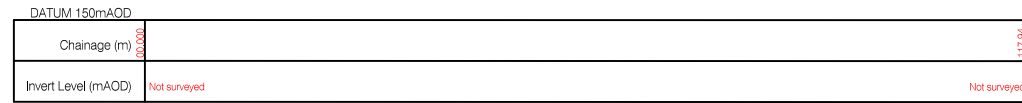
SECTION A-A (DITCH A)



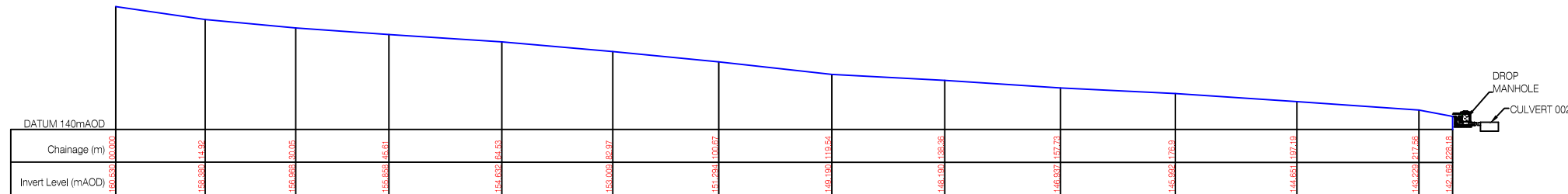
SECTION B-B (DITCH B)



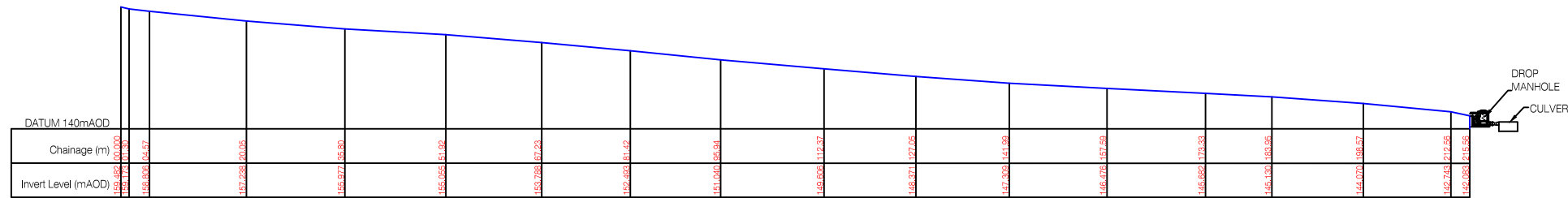
SECTION B-B (DITCH B) CONTINUED



SECTION D-D (DITCH D)



SECTION E-E (SAND LANE DITCHES - DITCH 1)



SECTION E-E (SAND LANE DITCHES - DITCH 2)

- GENERAL**
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 - All materials and Works in accordance with current British Standards or equivalent European Standards.
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				THE MORAY COUNCIL DIRECT SERVICES - CONSULTANCY COUNCIL OFFICE HIGH STREET ELGIN IV30 1BX TEL: 01343 543451		NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2 DITCH LONG SECTIONS A-A, B-B, C-C, D-D, and E-E. AS-BUILT INVERT LEVELS		
C	AS BUILT	PCE	GD					Mar'17
B	CONSTRUCTION ISSUE	GD	DH	Mar'16	Scales at A1: 1:500 vertical, 1:500 horizontal			
A	TENDER ISSUE	GD	DH	Oct'15				
Rev.	Amendment Details	By	Chfd	Date	MORAY COUNCIL. ALL RIGHTS RESERVED			
							Drawing Number: CAP08019 102/103	Revision: C

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services confirmed on site prior to any excavation including private field drainage.
- The Contractor to take precautions against Giant Hogweed and Japanese Knotweed if present on the site.

- GENERAL**
- This drawing read in conjunction with all other relevant drawings and the Specification.
 - All materials and Works in accordance with current British Standards or equivalent European Standards.
 - All dimensions in millimetres unless noted otherwise.
 - All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
 - All co-ordinates are to Ordnance Survey data unless noted otherwise.
 - All structural steelwork is CE marked in accordance with BS EN 1090-1 : 2009

- CONCRETE**
- All concrete produced and placed in accordance with BS 8500-1, BS 8500-2 and BS EN 206-1.
 - Concrete shall be in accordance with BS 8500-1, with the following requirements:
 - Designed mix conforming to BS 8500-2
 - Compressive strength class C28/35
 - Max w/c ratio 0.45; min cement content 360kg/m³
 - Cement types III/B, IVB-V
 - Max aggregate size 20mm
 - Precast concrete culvert units designed to BS EN 1992 Eurocode 2: Part 2 - Concrete Bridges, BS EN 1991 Eurocode 1: Part 2 - Traffic Loads on Bridges, BS EN 13369 - precast concrete
 - Concrete exposure classes related to environmental conditions XD2 to BS 8500-1/BS EN 206-1 with minimum 50mm cover to reinforcement.
 - Traffic load: Load Model 1, Load Model 2 & Load Model 3 equivalent to SV80 (BD86/07) to BS EN 1991-2 & NA to BS EN 1991-2.
 - Refer to Specification Appendix 17/1.

CJ = CONSTRUCTION JOINT
EJ = EXPANSION JOINT

WATERPROOFING

- Waterproofing shall be a permitted BBA product and be hot applied. Refer to Specification Appendix 20/1.

STONEMWORK

- Stonework random rubble uncoursed in accordance with Specification Appendix 24/1.

- ROAD CONSTRUCTION**
- Surface Course
 - HRA 30/14F SURF 40/60 DES
 - Reference: EN13108-4 coated chippings:
 - Nominal size - 20mm in accordance with Clause 915 and shall conform to BS EN 13108-4, taking into account cl915 IAN 101/07 and the detailed requirements in BSI PD 6691 Annex C Clause C.2.8.2.
 - PSV Category: strategic and distributor roads: PSV62 (>62)
 - residential roads: PSV50 (>50)
 - AAV category: AAV10 (<10)
 - Minimum air temperature for laying surface course 0°C
 - Minimum delivery temperature 155°C
 - wind speed (maximum at any air temperature) 40km/h (at 2m height)
 - Binder Course
 - HRA 60/20 bin 40/60
 - BS EN 13108-4
 - Regulating Course
 - HRA 0/2 f reg 40/60
 - BS EN 13108-4 13.
 - Full depth road construction is limited to the area of the new Bridge of Kinmillie.

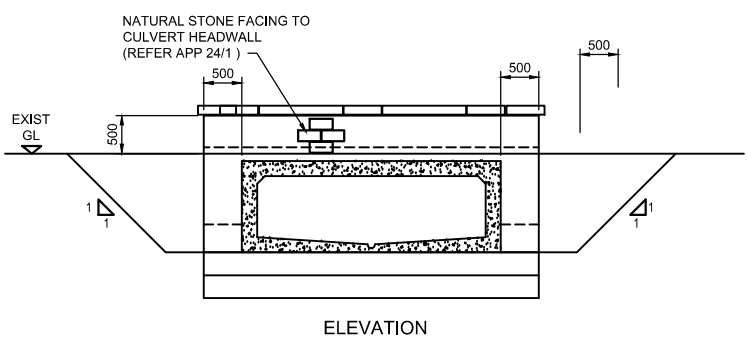
C	AS BUILT	GD	DH	March 2017
B	CONSTRUCTION ISSUE	GD	DH	March '16
A	TENDER ISSUE	GD	DH	Oct' 15
Rev.	Amendment Details	By	City	Date

THE MORAY COUNCIL
DIRECT SERVICES - CONSULTANCY
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ELGIN IV30 1BX
TEL: 01343 543451

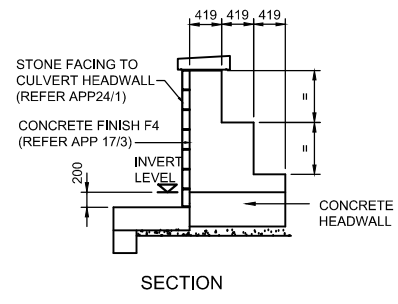
NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2

DITCH NETWORK CULVERTS 01, 02 & 03 DETAILS

Drawn:	GD	Checked:	DH	Issued for:	CONSTRUCTION
Scales at A1:	AS SHOWN	Date:	Oct' 2015		
Drawing Number:	CAP08019-104			Revision:	C
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CULVERT HEADWALL DETAILS
SCALE 1:50

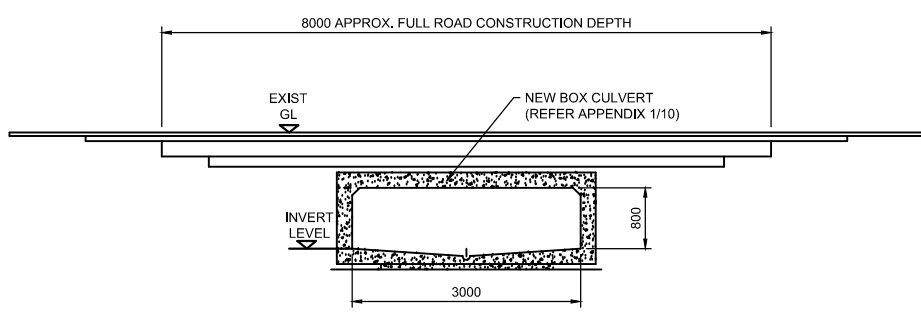


CULVERT HEADWALL DETAILS
SCALE 1:50

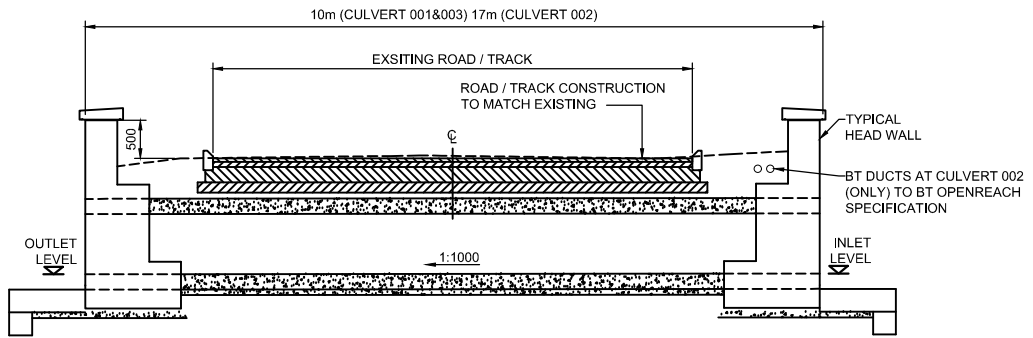
Ref	Inlet Level	Outlet Level	Length	Size
Culvert 001	140.737	140.682	10.33m	3.0 x 0.8m
Culvert 002	141.095	141.094	18.6m	3.0 x 0.8m
Culvert 003	157.629	156.620	10.5m	3.0 x 0.8m

NOTE:

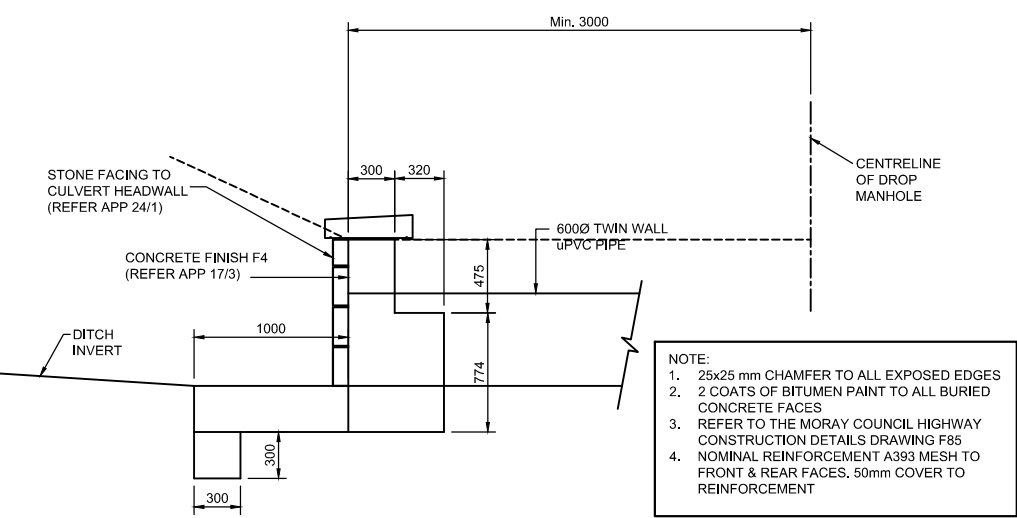
- 25x25 mm CHAMFER TO ALL EXPOSED EDGES
- 2 COATS OF BITUMEN PAINT TO ALL BURIED CONCRETE FACES
- REFER TO THE MORAY COUNCIL HIGHWAY CONSTRUCTION DETAILS DRAWING F85
- NOMINAL REINFORCEMENT A393 MESH TO FRONT & REAR FACES. 50mm COVER TO REINFORCEMENT



CULVERT SECTION
SCALE 1:50



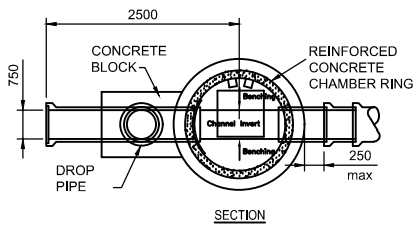
TYPICAL CULVERT LONGITUDINAL SECTION
SCALE 1:50



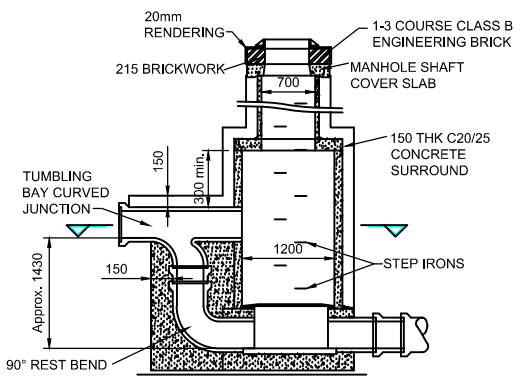
HEADWALL AT DITCH B AND SAND LANE DITCHES
SCALE 1:50

NOTE:

- 25x25 mm CHAMFER TO ALL EXPOSED EDGES
- 2 COATS OF BITUMEN PAINT TO ALL BURIED CONCRETE FACES
- REFER TO THE MORAY COUNCIL HIGHWAY CONSTRUCTION DETAILS DRAWING F85
- NOMINAL REINFORCEMENT A393 MESH TO FRONT & REAR FACES. 50mm COVER TO REINFORCEMENT



DROP MANHOLE AT DITCH B AND SAND LANE DITCHES
SCALE 1:50



MANHOLE DETAILS READ IN CONJUNCTION WITH APPENDIX 5/1 OF THE SPECIFICATION

JOINT TABLE.

PIPE Ø (mm)	SHORT LENGTH OF PIPE EFFECTIVE LENGTH. (mm).	ROCKER PIPE EFFECTIVE LENGTH. (mm).
UP TO 600	600 max.	600
675-750	600 max.	1000
825-1250	600 max.	1250

GENERAL NOTES

1. This drawing to be read in conjunction with all other relevant drawings and the Specification.
2. All materials and Works must be in accordance with current British Standards or equivalent European Standards.
3. All dimensions in millimetres unless noted otherwise.
4. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
5. All co-ordinates are to Ordnance Survey data unless noted otherwise.

- LIMIT OF LAND AFFECTED BY OPERATIONS
- AS BUILT DITCH INVERT
- REPLACEMENT FENCES

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services confirmed on site prior to any excavation including private field drainage.
- The Contractor to take precautions against Giant Hogweed and Japanese Knotweed if present on the site.

C	AS BUILT	PCE	GD	March 2017
B	CONSTRUCTION ISSUE	GD	DH	March '16
A	TENDER ISSUE	GD	DH	Oct '15
Rev.	Amendment Details	By	Ctd	Date

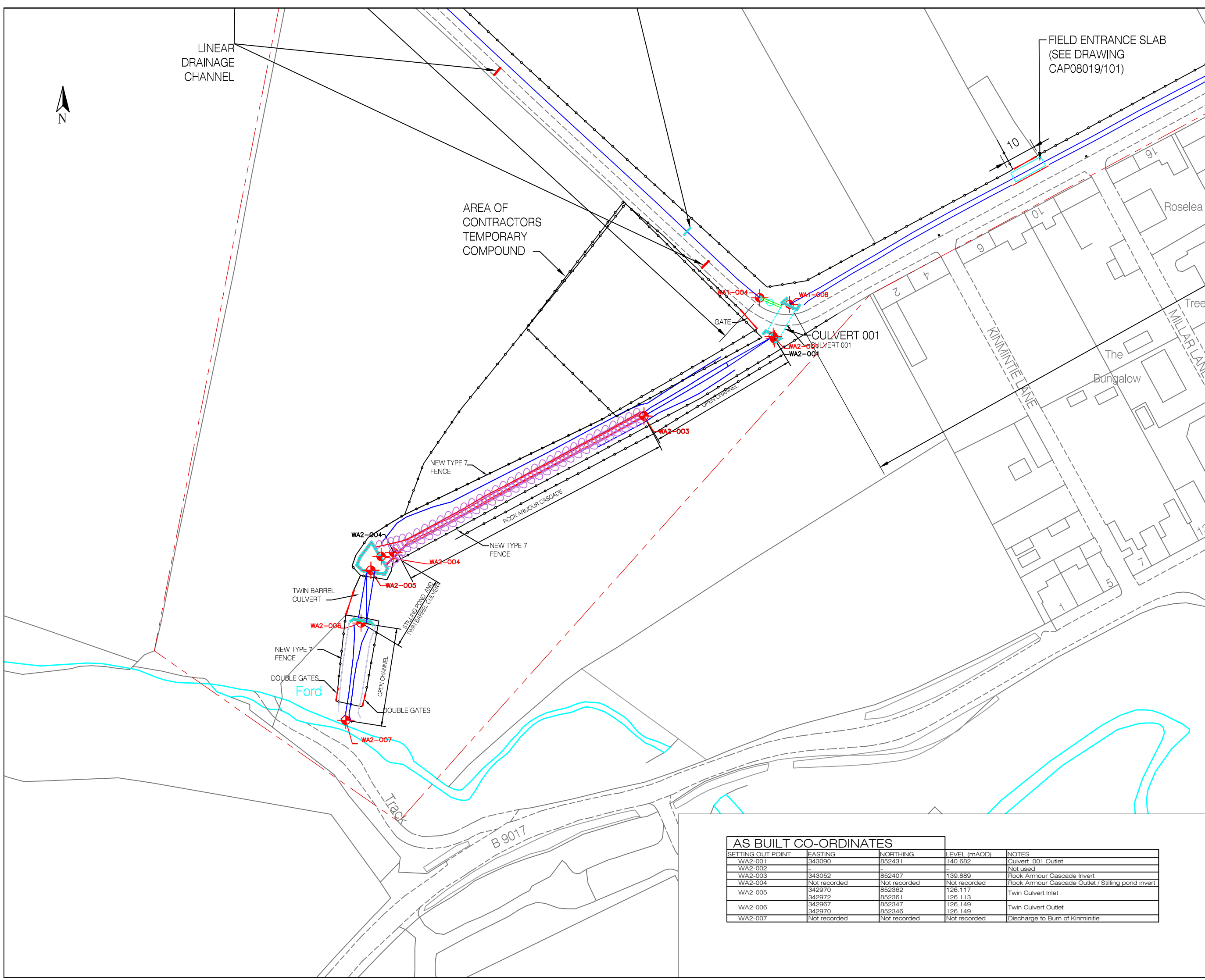
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 ELGIN IV30 9BX
 TEL: 01343 543451

NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2

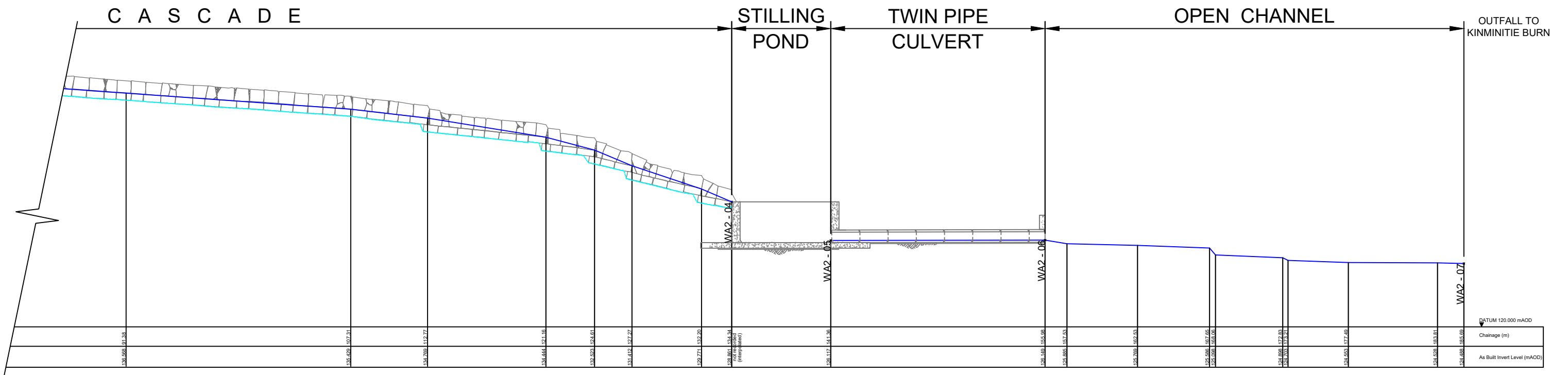
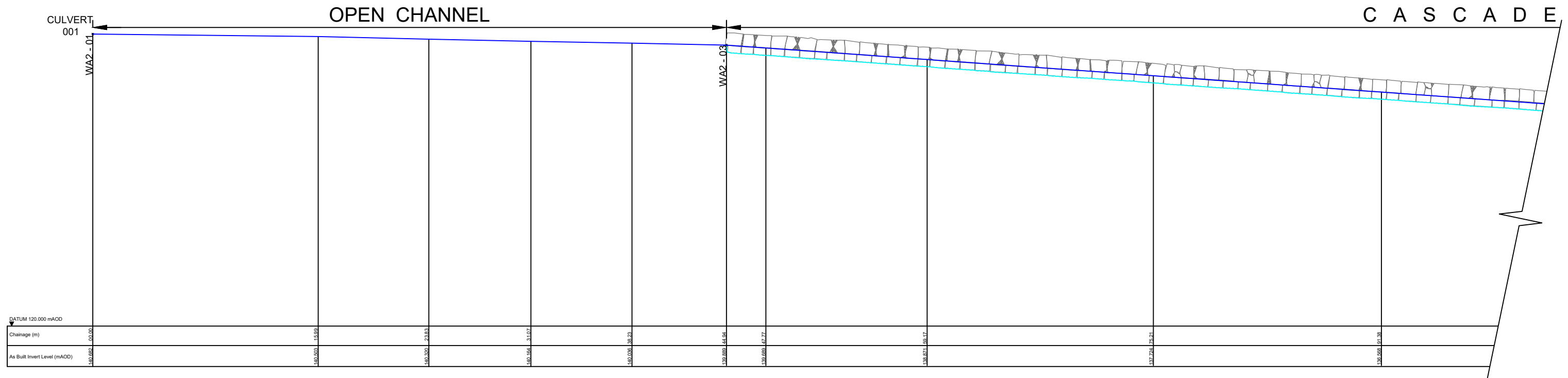
CASCADE GENERAL ARRANGEMENT

Drawn: **PCE** Checked: **GD** Issued for: **AS BUILT**
 Scales at A1: **1:500** Date: **MARCH 2017**

Drawing Number: **CAP08019 200** Revision: **C**



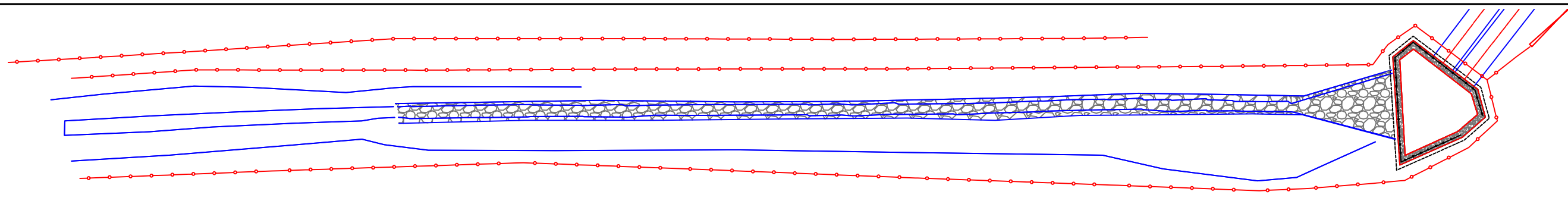
SETTING OUT POINT	EASTING	NORTHING	LEVEL (mAOD)	NOTES
WA2-001	343090	852431	140.682	Culvert 001 Outlet
WA2-002	-	-	-	Not used
WA2-003	343052	852407	139.889	Rock Armour Cascade Invert
WA2-004	Not recorded	Not recorded	Not recorded	Rock Armour Cascade Outlet / Stilling pond invert
WA2-005	342970 342972	852362 852361	126.117 126.113	Twin Culvert Inlet
WA2-006	342967 342970	852347 852346	126.149 126.149	Twin Culvert Outlet
WA2-007	Not recorded	Not recorded	Not recorded	Discharge to Burn of Kinminitie



GENERAL

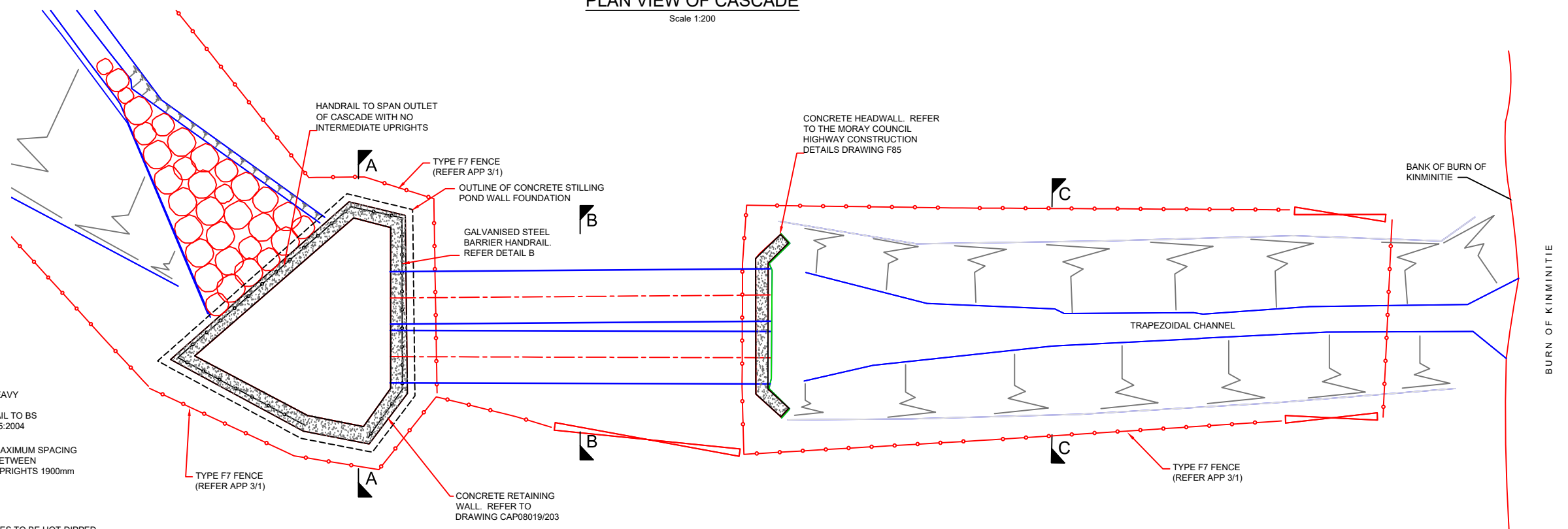
1. This drawing to be read in conjunction with all other relevant drawings and the Specification.
2. All dimensions in millimetres unless noted otherwise.
3. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
4. All co-ordinates are to Ordnance Survey data unless noted otherwise.

		THE MORAY COUNCIL DIRECT SERVICES - CONSULTANCY PO BOX 6760 ELGIN IV30 9BX TEL: 01343 543451		NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2	
				CASCADE LONGITUDINAL SECTION	
C AS BUILT B CONSTRUCTION ISSUE A TENDER ISSUE Rev: Amendment Details	PCE 08/04/2015 08/04/15 08/04/15	Drawn: PCE Scale: as shown Date: April 2017	Checked: GD Issue: AS BUILT Date:	Drawing Number:	Rev:
MORAY COUNCIL ALL RIGHTS RESERVED				CAPO8019 201	C



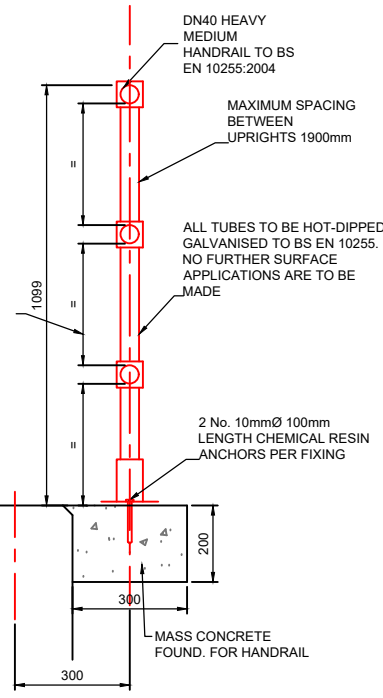
PLAN VIEW OF CASCADE

Scale 1:200



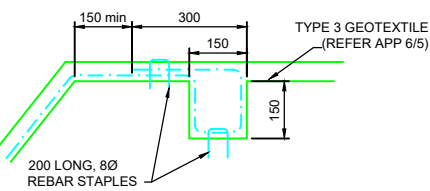
STILLING POND TO KINMINITIE BURN OUTFALL

Scale 1:100



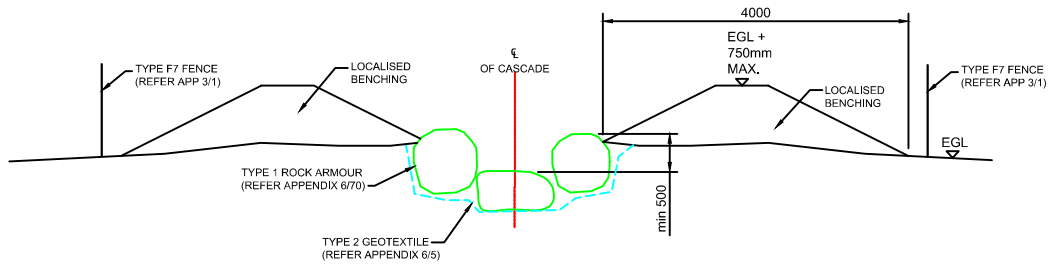
BARRIER HANDRAIL

Scale 1:10



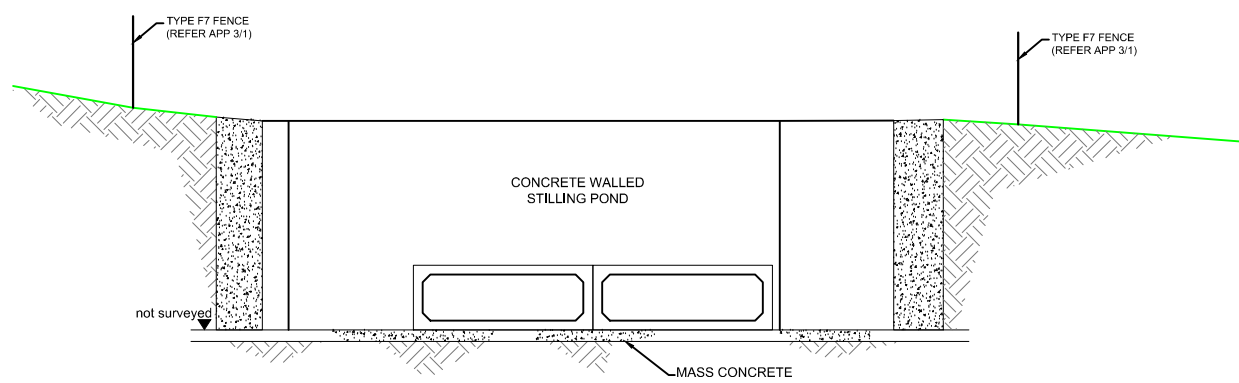
**DETAIL A
GEOTEXTILE
ANCHOR TRENCH**

Scale 1:10



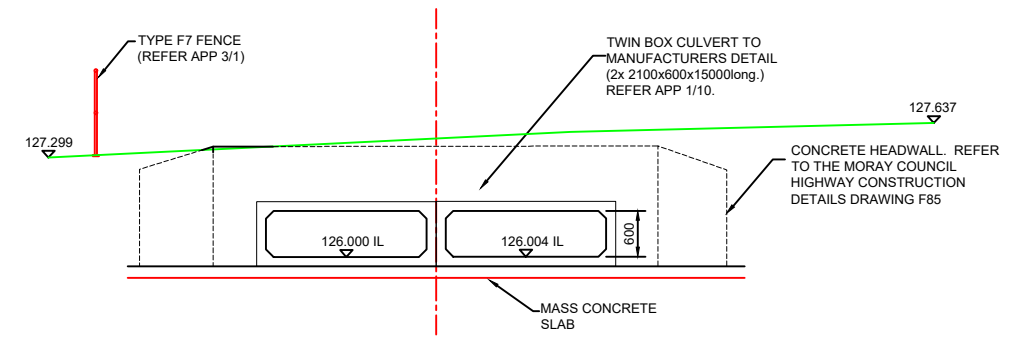
TYPICAL SECTION THROUGH CASCADE

Scale 1:50



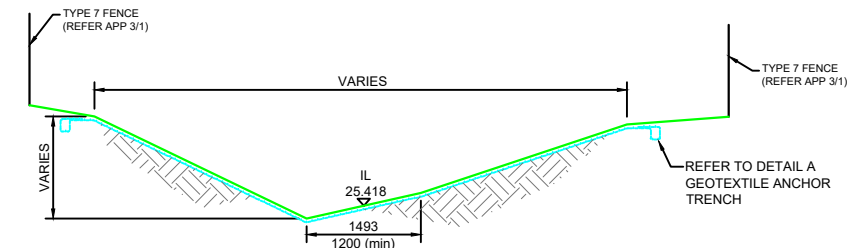
SECTION A-A

Scale 1:50



SECTION B-B

Scale 1:50



SECTION C-C

Scale 1:50

NOTES

GENERAL

1. This drawing to be read in conjunction with all other relevant drawings and the Specification.
2. All dimensions in millimetres unless noted otherwise.
3. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
4. All co-ordinates are to Ordnance Survey data unless noted otherwise.
5. All structural steelwork is to be CE marked in accordance with BS EN 1090-1: 2009

CONCRETE

6. All concrete produced and placed in accordance with BS 8500-1:2006, BS 8500-2:2002 and BS EN 206-1:2000.
7. Concrete in accordance with BS 8500-1 with the following requirements:
 - designed mix conforming to BS 8500-2
 - Compressive strength class C30/37
 - Max w/c ratio 0.55; Min Cement Content 300kg/m³
 - Cement types III/B,
 - Max aggregate size 20mm
8. Concrete exposure classes related to environmental conditions XC4 to BS 8500-1/BS EN 206-1 with minimum 50mm cover to reinforcement
9. Minimum lap length for 16mmØ bars 600m.
10. For details of reinforcement, refer to Drawing number CAP08019/203 and Bar Bending Schedule No. CAP08019/203 Sheets 01,02 & 03.
11. Refer to Specification Appendix 17/1.

C	AS BUILT	PCE	GD	APRIL 2017
B	CONSTRUCTION ISSUE	GD	DH	March '16
A	TENDER ISSUE	GD	DH	Oct '15
Rev.	Amendment Details	By	CHD	Date

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**NEWMILL FLOOD ALEVIATION
SCHEME PHASE 2**

**CASCADE
CROSS SECTION & DETAILS**

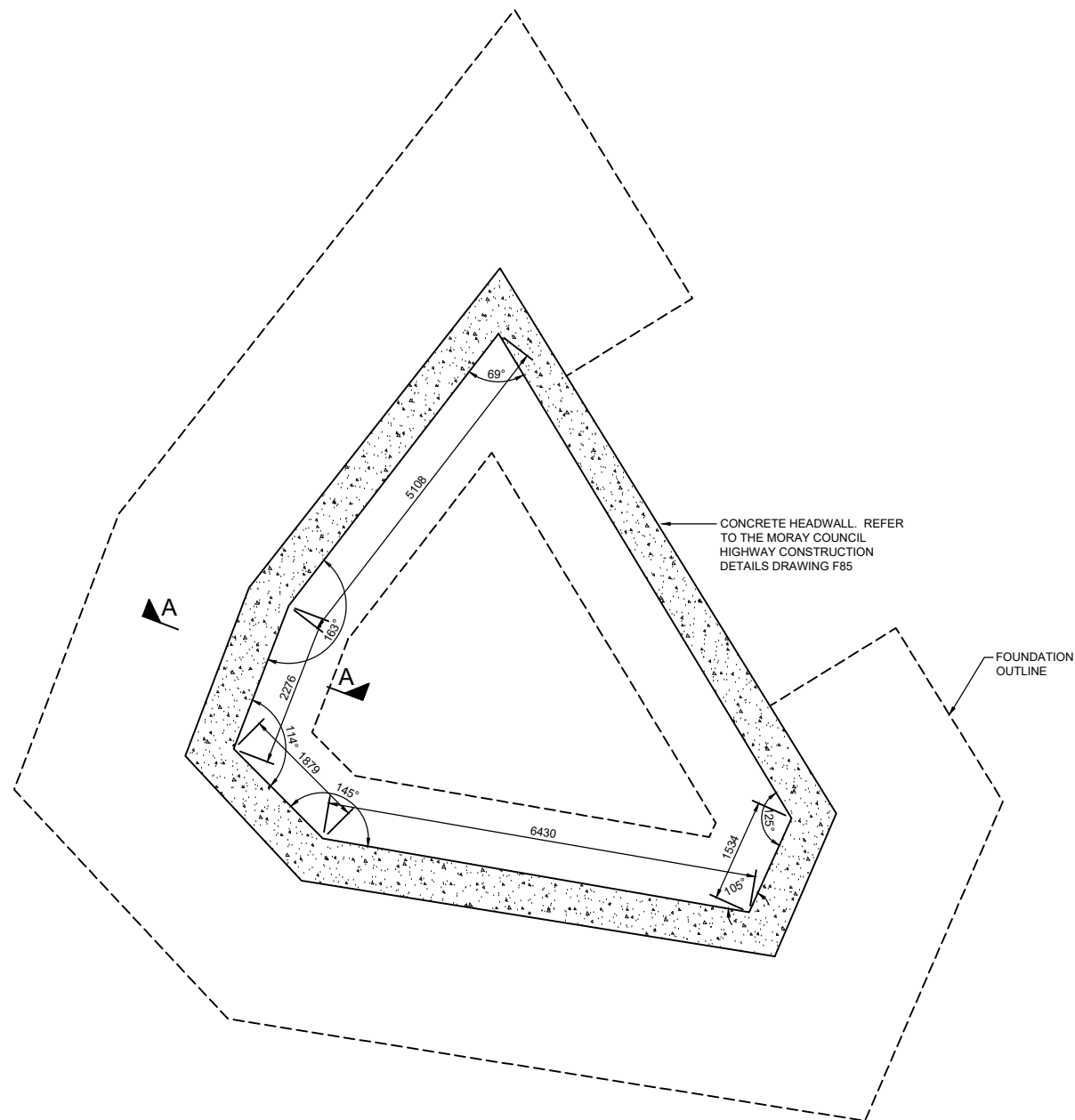
Drawn:	GD	Checked:	DH	Issued for:	AS BUILT
Scales at A1:	AS SHOWN	Date:	Oct '2015	Revision:	C
Drawing Number:	CAP08019 202				
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GENERAL

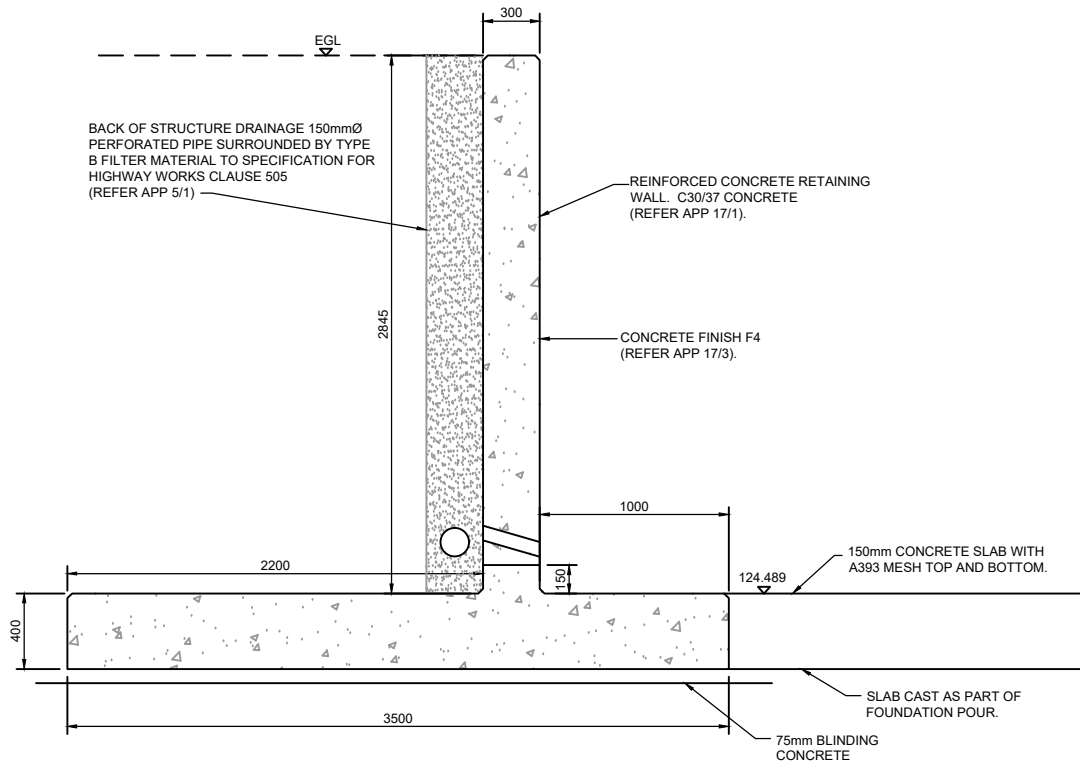
1. This drawing to be read in conjunction with all other relevant drawings and the Specification.
2. All materials and Works in accordance with current British Standards or equivalent European Standards.
3. All dimensions in millimetres unless noted otherwise.
4. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
5. All co-ordinates are to Ordnance Survey data unless noted otherwise.
6. All structural steelwork CE marked in accordance with BS EN 1090-1 : 2009

CONCRETE

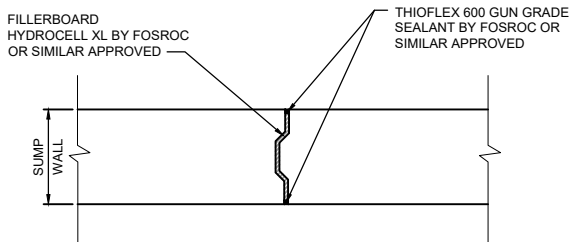
7. All concrete produced and placed in accordance with BS 8500-1:2006, BS 8500-2:2002 and BS EN 206-1:2000.
8. Concrete in accordance with BS 8500-1 with the following requirements:
 - designed mix conforming to BS 8500-2
 - Compressive strength class C30/37
 - Max w/c ratio 0.55; Min Cement Content 300kg/m³
 - Cement types IIB,
 - Max aggregate size 20mm
13. Concrete exposure classes related to environmental conditions XC4 to BS 8500-1/BS EN 206-1 with minimum 50mm cover to reinforcement
14. Minimum lap length for 16mmØ bars 600m.
15. All bars supported on proprietary spacers.
16. Refer to Specification Appendix 17/1.



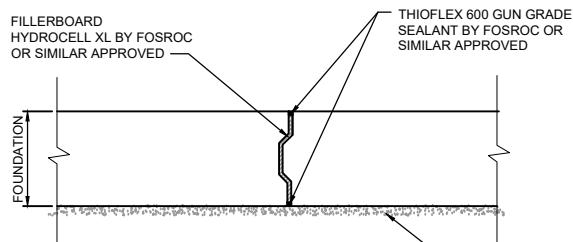
CONCRETE STILLING POND PLAN
Scale 1:50



CROSS SECTION A-A
Scale 1:20



WALL JOINT DETAIL (TONGUE AND GROOVE)
Scale 1:20



FOUNDATION JOINT DETAIL (TONGUE AND GROOVE)
Scale 1:20

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services confirmed on site prior to any excavation including private field drainage.
- Clearance of the stilling pond should be by mechanical means.

Rev.	Amendment Details	By	Chk'd	Date
D	AS BUILT	PCE	GD	MAY 2017
C	JOINT DETAILS REVISED	GD	DH	June '16
B	CONSTRUCTION ISSUE	GD	DH	March '16
A	TENDER ISSUE	GD	DH	Aug '15

THE MORAY COUNCIL
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PO BOX 6760
ELGIN IV30 9BX
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NEWMILL FLOOD ALEVATION SCHEME PHASE 2

CASCADE CONCRETE SUMP DETAILS

Drawn: GD	Checked: DH	Issued for: AS BUILT
Scales at A1: AS SHOWN	Date: August 2015	
Drawing Number: CAP08019 203	Revision: D	

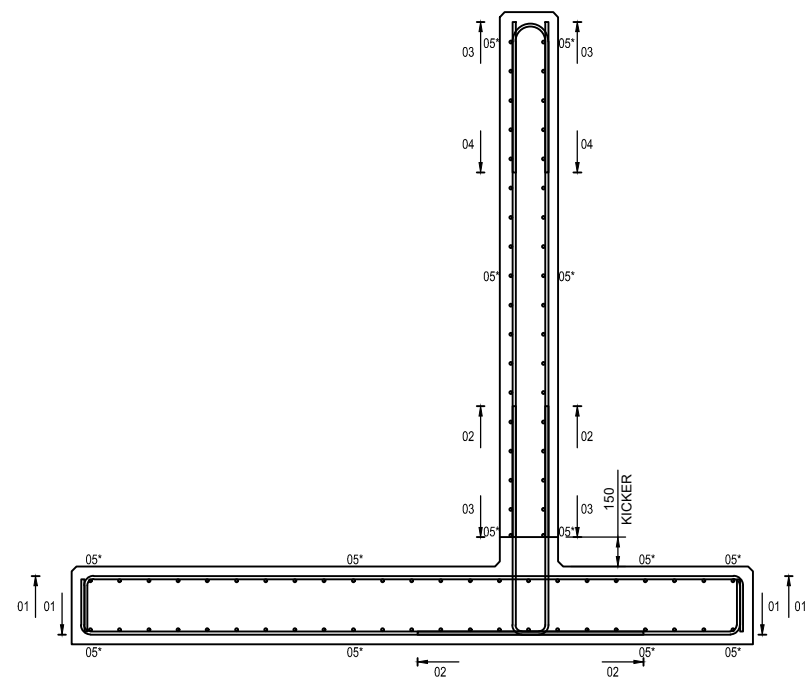
NOTES

GENERAL

1. This drawing to be read in conjunction with all other relevant drawings and the Specification.
2. All dimensions in millimetres unless noted otherwise.
3. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
4. All co-ordinates are to Ordnance Survey data unless noted otherwise.
5. All structural steelwork CE marked in accordance with BS EN 1090-1 : 2009

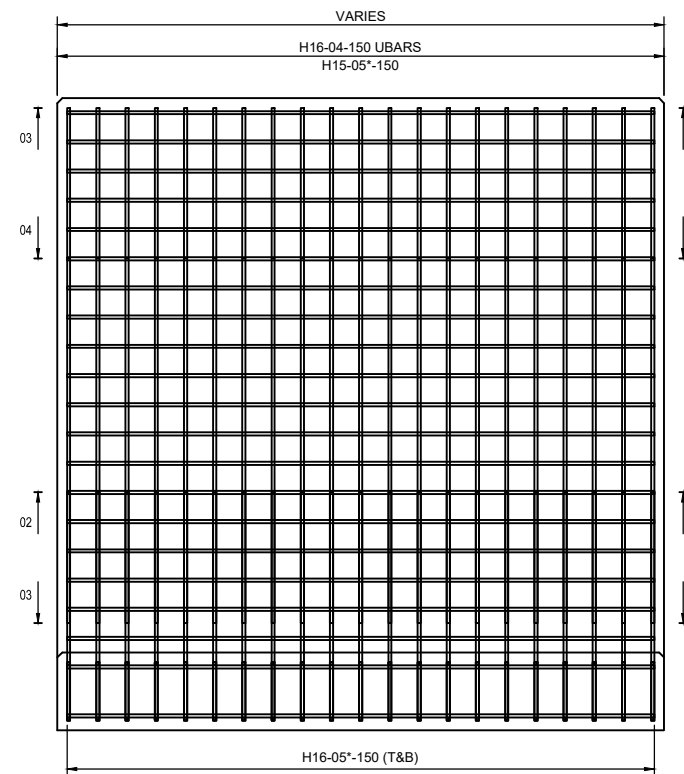
CONCRETE

6. All concrete produced and placed in accordance with BS 8500-1:2006, BS 8500-2:2002 and BS EN 206-1:2000.
7. Concrete in accordance with BS 8500-1 with the following requirements:
 - designed mix conforming to BS 8500-2
 - Compressive strength class C30/37
 - Max w/c ratio 0.55; Min Cement Content 300kg/m3
 - Cement types III/B,
 - Max aggregate size 20mm
8. Concrete exposure classes related to environmental conditions XC4 to BS 8500-1/BS EN 206-1 with minimum 50mm cover to reinforcement
9. Minimum lap length for 16mmØ bars 600m.
10. All bars to be supported on proprietary spacers.
11. For details of reinforcement, refer to Bar Bending Schedule No. CAP08019/203 Sheets 01,02 & 03.



TYPICAL CROSS SECTION

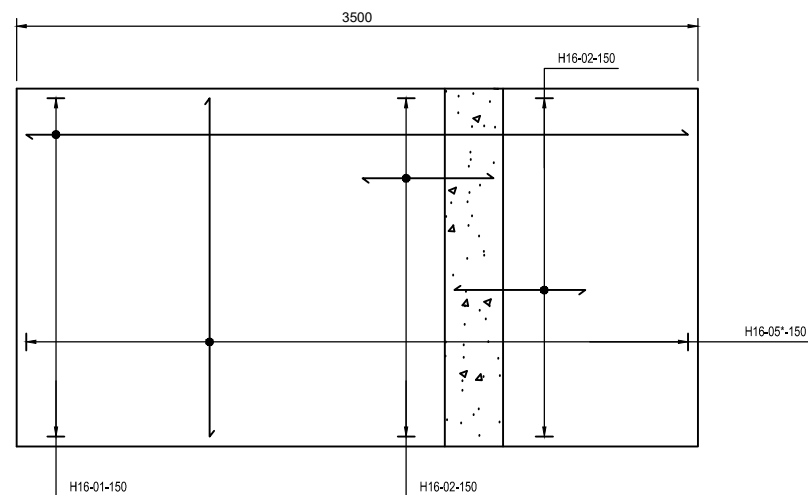
Scale 1:20



TYPICAL ELEVATION ON WALL

Scale 1:20

NOTE:
 1. 25x25 mm CHAMFER TO ALL EXPOSED EDGES
 2. 2 COATS OF BITUMEN PAINT TO ALL BURIED CONCRETE FACES
 3. BAR MARK 05* REFERS TO BAR MARK 05 (WALL A), BAR MARK 06 (WALL B), BAR MARK 07 (WALL C) AND BAR MARK 08 (WALL D)



FOUNDATION PLAN

Scale 1:20

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services confirmed on site prior to any excavation including private field drainage.
- Clearance of the stilling pond should be by mechanical means.

B	AS BUILT	PCE	GD	MAY 2017
A	CONSTRUCTION ISSUE	GD	DH	March '16
Rev.	Amendment Details	By	Ordn	Date

THE MORAY COUNCIL
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 ELGIN IV30 9BX
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NEWMILL FLOOD ALEVIATION SCHEME PHASE 2

CASCADE CONCRETE SUMP REINFORCEMENT DETAILS

Drawn:	PCE	Checked:	GD	Issued for:	AS BUILT
Scales at A1:	AS SHOWN	Date:	MAY 2017		
Drawing Number:	CAP08019 204			Revision:	B

NOTES

GENERAL

1. This drawing to be read in conjunction with all other relevant drawings and the Specification.
2. All materials and Works in accordance with current British Standards or equivalent European Standards.
3. All dimensions in millimetres unless noted otherwise.
4. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
5. All co-ordinates are to Ordnance Survey data unless noted otherwise.
6. For all utilities refer to drawing CAP08019/002 and Specification Appendix 1/16.

- LIMIT OF LAND AFFECTED BY OPERATIONS
- SURFACE WATER DITCH
- BT(OH) BT OVERHEAD CABLE (FOR OTHER UTILITIES REFER TO DRAWING CAP08019/002).
- GAS(MP) SCOTIA GAS MPM (FOR OTHER UTILITIES REFER TO DRAWING CAP08019/002).
- SL SL STREET LIGHTING (FOR OTHER UTILITIES REFER TO DRAWING CAP08019/002).
- SSE(OH) SSE OVERHEAD (FOR OTHER UTILITIES REFER TO DRAWING CAP08019/002).

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services confirmed on site prior to any excavation including private field drainage.

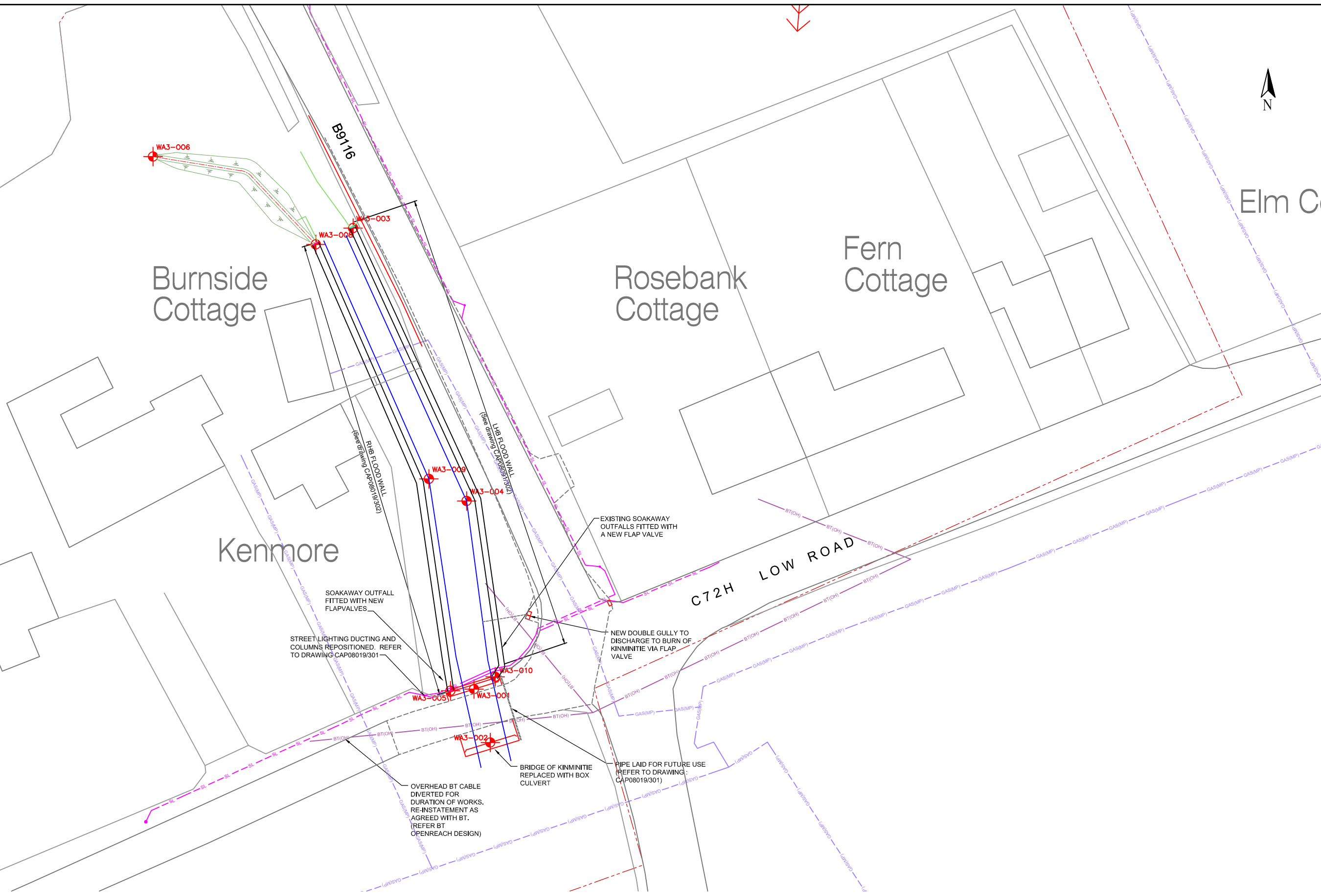
C	AS BUILT	PCE	GD	MAY 2017
B	CONSTRUCTION ISSUE	GD	DH	March '16
A	TENDER ISSUE	GD	DH	Aug '15
Rev.	Amendment Details	By	CHK	Date

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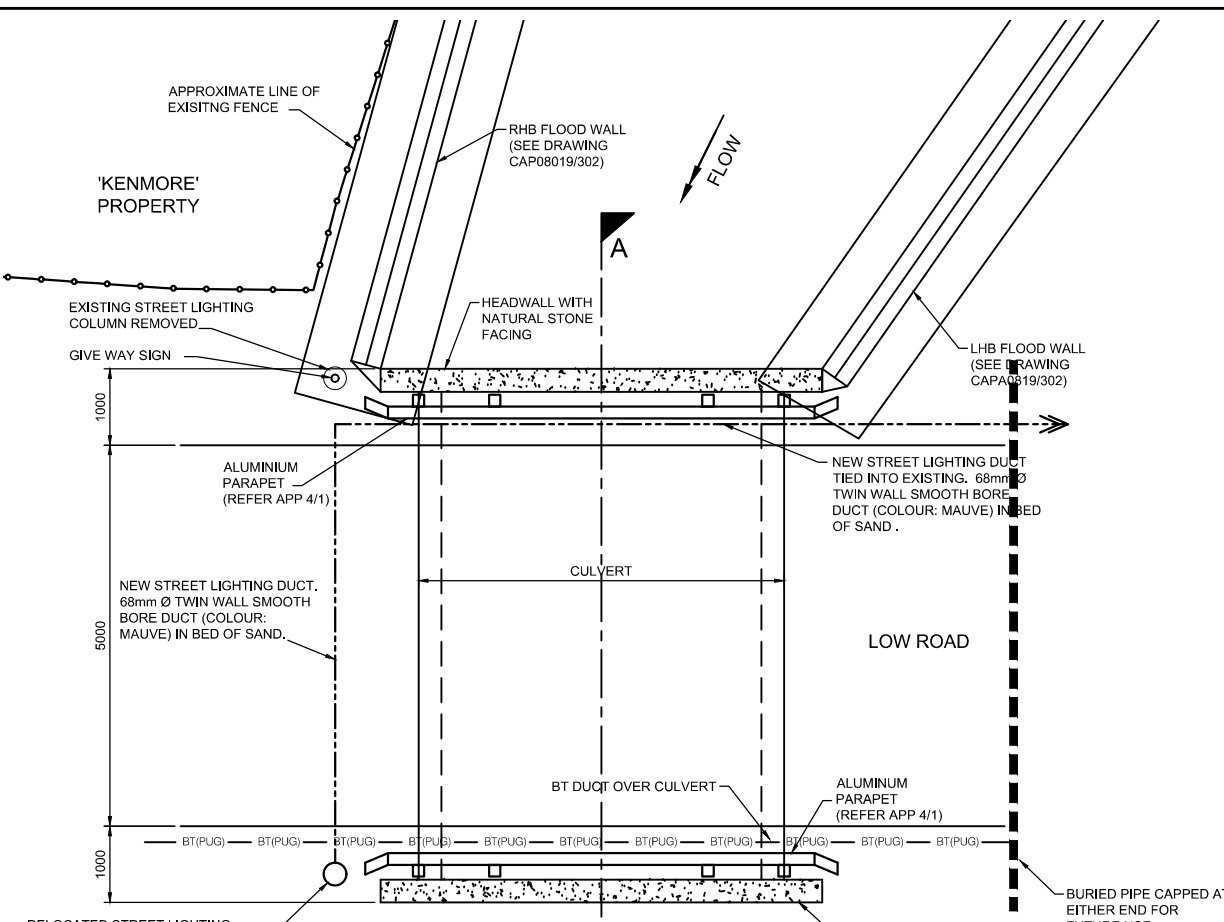
NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2

LOW ROAD GENERAL ARRANGEMENT

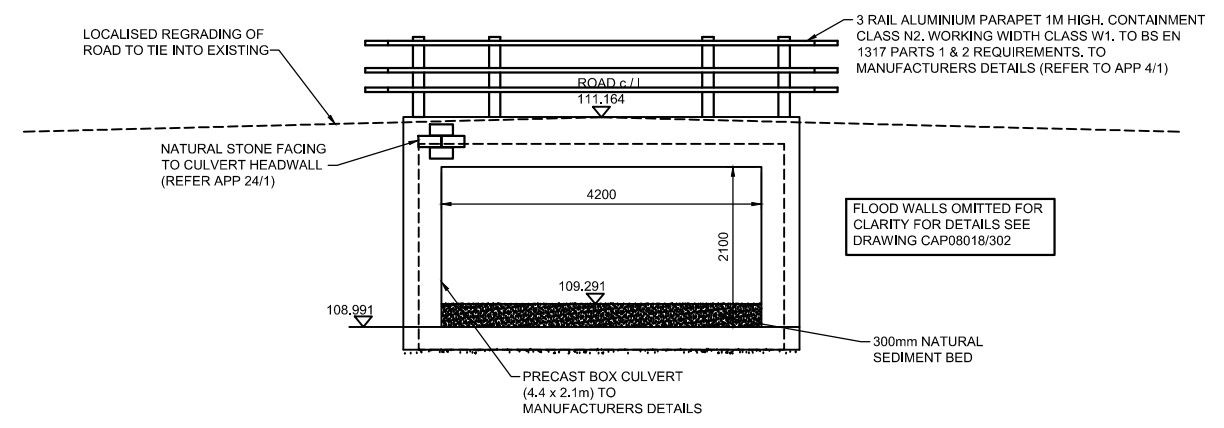
Drawn:	GD	Checked:	DH	Issued for:	CONSTRUCTION
Scales at A1:	1:200	Date:	August 2015		
Drawing Number:	CAP08019 300			Revision:	C



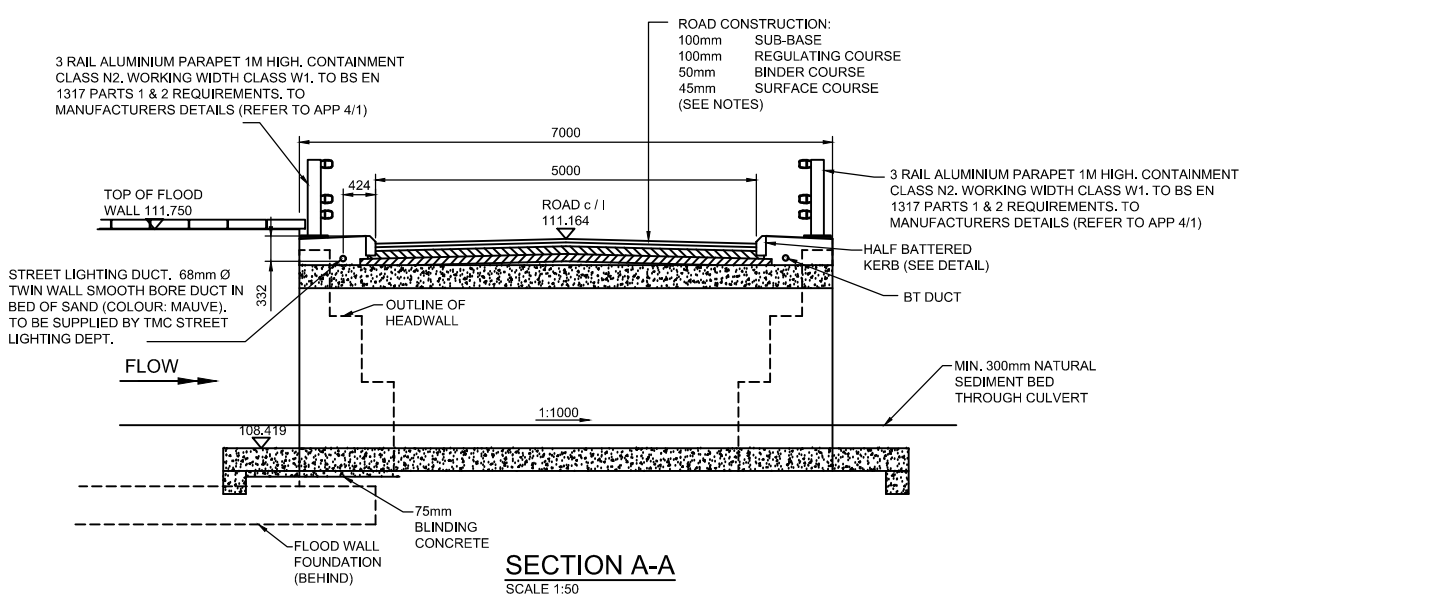
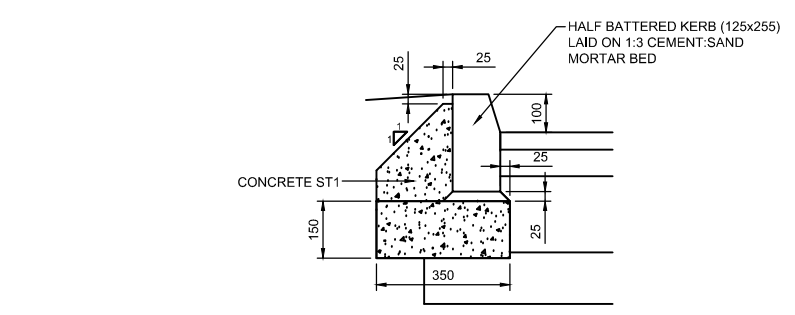
SETTING OUT CO-ORDINATES				
SETTING OUT POINT	EASTING	NORTHING	LEVEL (mAOD)	NOTES
WA3-001	343383	852116	108.991	Culvert invert level (upstream)
WA3-002	343385	852110	108.991	Culvert invert level (downstream)
WA3-003	343370	852165	112.061	Start of LHB flood wall (centreline of wall)
WA3-004	343383	852136	109.231	Adjacent to West side LHB flood wall change of direction
WA3-005	343381	852116	112.000	LHB tie into culvert headwall (centreline of wall)
WA3-006	343349	852173	112.274	Start of Embankment (centreline)
WA3-007	-	-	-	Not used
WA3-008	343366	852164	112.014	End of embankment (adjacent to C/L at start of wall)
WA3-009	343379	852139	109.200	Adjacent to east side RHB flood wall change of direction
WA3-010	343386	852117	111.988	RHB tie into culvert headwall (centreline of wall)



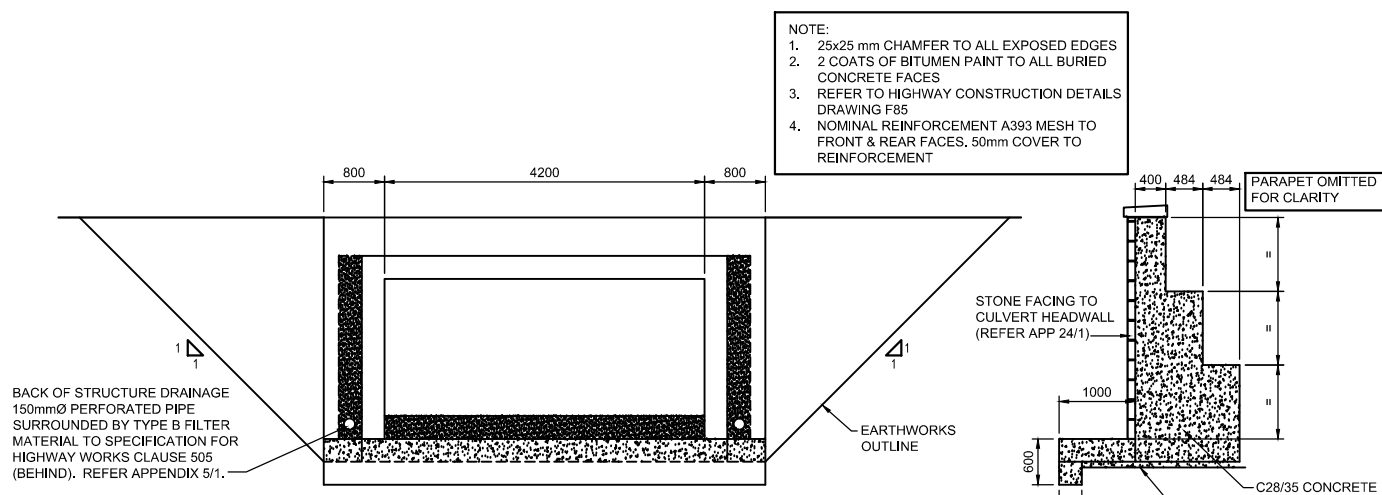
PLAN OF PROPOSED CULVERT
Scale 1:50



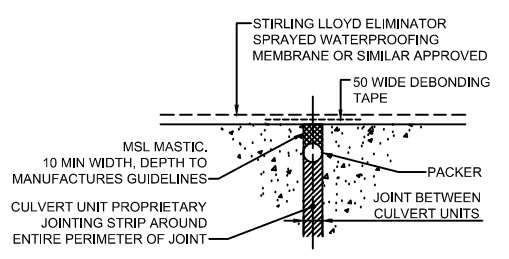
ELEVATION BRIDGE OF KINMINITIE (C72H/20)
Scale 1:50



SECTION A-A
SCALE 1:50



ELEVATION HEADWALL DETAILS
SCALE 1:50



TYPICAL WATERPROOFING DETAIL AT CULVERT JOINT
SCALE 1:2

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services confirmed on site prior to any excavation including private field drainage.

- NOTES**
- GENERAL**
- This drawing to be read in conjunction with all other relevant drawings and the Specification.
 - All materials and Works in accordance with current British Standards or equivalent European Standards.
 - All dimensions in millimetres unless noted otherwise.
 - All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
 - All co-ordinates are to Ordnance Survey data unless noted otherwise.
 - All structural steelwork CE marked in accordance with BS EN 1090-1 : 2009

- CONCRETE**
- All concrete produced and placed in accordance with BS 8500-1, BS 8500-2 and BS EN 206-1.
 - Concrete in accordance with BS 8500-1, with the following requirements:
 - Designed mix conforming to BS 8500-2
 - Compressive strength class C28/35
 - Max w/c ratio 0.45; min cement content 360kg/m³
 - Cement types III/B, IV/B-V
 - Max aggregate size 20mm
 - Precast concrete culvert units shall be designed to BS EN 1992 Eurocode 2: Part 2 - Concrete Bridges, BS EN 1991 Eurocode 1: Part 2 - Traffic Loads on Bridges, BS EN 13369 - precast concrete
 - Concrete exposure classes related to environmental conditions XD3 to BS 8500-1/BS EN 206-1 with minimum 50mm cover to reinforcement.
 - Traffic load: Load Model 1, Load Model 2 & Load Model 3 equivalent to SV80 (BD86/07) to BS EN 1991-2 & NA to BS EN 1991-2.
 - The precast manufacturer shall supply a product compliance certificate in accordance with BS EN 14844 - Precast Concrete Products - Box Culverts.
 - Refer to Specification Appendix 17/1.

- WATERPROOFING**
- Waterproofing shall be a permitted BBA product and be hot applied. Refer to Specification Appendix 20/1.

- ROAD CONSTRUCTION**
- SURFACE COURSE**
HRA 30/14F surf 40/60 des
Reference: EN13108-4 coated chippings:
Nominal size - 20mm in accordance with clause 915 and shall conform to BS EN 13108-4, taking into account CL915 IAN 101/07 and the detailed requirements in BSI PD 6691 Annex C clause C.2.8.2.
PSV Category: Strategic and Distributor Roads: PSV62 (≥62) Residential Roads: PSV50 (≥50) AAV Category: AAV10 (≤10)
 - BINDER COURSE**
HRA 60/20 bin 40/60
BS EN 13108-4
 - REGULATING COURSE**
HRA 0/2 F reg 40/60
BS EN 13108-4 13.

Refer to Specification Appendix 7/1# Schedule 2.

STREET LIGHTING

- All Street Lighting Works carried out by The Moray Council Street Lighting Department.

- STONEMWORK**
- Stonework to be random rubble uncoursed in accordance with Specification Appendix 24/1.

C	AS BUILT	PCE	GD	MAY 2017
B	CONSTRUCTION ISSUE	GD	DH	March '16
A	TENDER ISSUE	GD	DH	Oct '15
Rev.	Amendment Details	By	Crtd	Date

THE MORAY COUNCIL
DIRECT SERVICES - CONSULTANCY

PO BOX 6760
ELGIN IV30 1BX
TEL: 01343 543451

NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2

LOW ROAD BRIDGE OF KINMINITIE DETAILS

Drawn: **GD** Checked: **DH** Issued for: **AS BUILT**

Scales at A1: **AS SHOWN** Date: **October 2015**

Drawing Number: **CAPO8019-301** Revision: **C**

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services confirmed on site prior to any excavation including private field drainage.

NOTES

GENERAL

- This drawing to be read in conjunction with all other relevant drawings and the Specification.
- All materials and Works must be in accordance with current British Standards or equivalent European Standards.
- All dimensions in millimetres unless noted otherwise.
- All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
- All co-ordinates are to Ordnance Survey data unless noted otherwise.
- All structural steelwork CE marked in accordance with BS EN 1090-1: 2009

CONCRETE

- All concrete produced and placed in accordance with BS 8500-1, BS 8500-2 and BS EN 206-1.
- Concrete in accordance with BS 8500-1, with the following requirements:
 - Designed mix conforming to BS 8500-2
 - Compressive strength class C28/35
 - Max w/c ratio 0.45; min cement content 360kg/m³
 - Cement types IIIB, IVB-V
 - Max aggregate size 20mm
- Precast concrete culvert units designed to BS EN 1992 Eurocode 2: Part 2 - Concrete Bridges, BS EN 1991 Eurocode 1: Part 2 - Traffic Loads on Bridges, BS EN 13369 - precast concrete
- Concrete exposure classes related to environmental conditions XD3 to BS 8500-1/BS EN 206-1 with minimum 50mm cover to reinforcement.
- Traffic load: Load Model 1, Load Model 2 & Load Model 3 equivalent to SV80 (BD86/07) to BS EN 1991-2 & NA to BS EN 1991-2.

CJ = CONSTRUCTION JOINT
EJ = EXPANSION JOINT

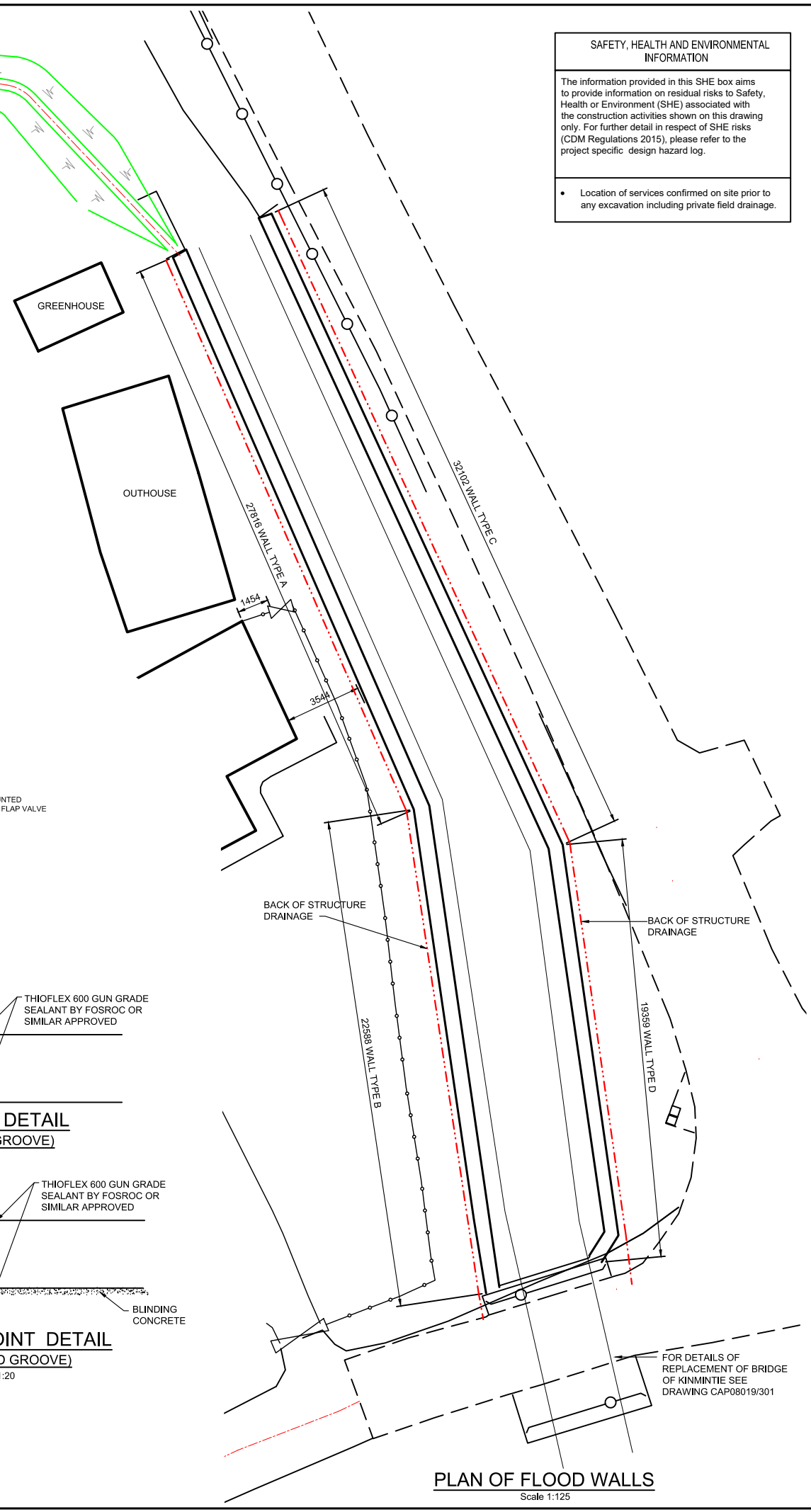
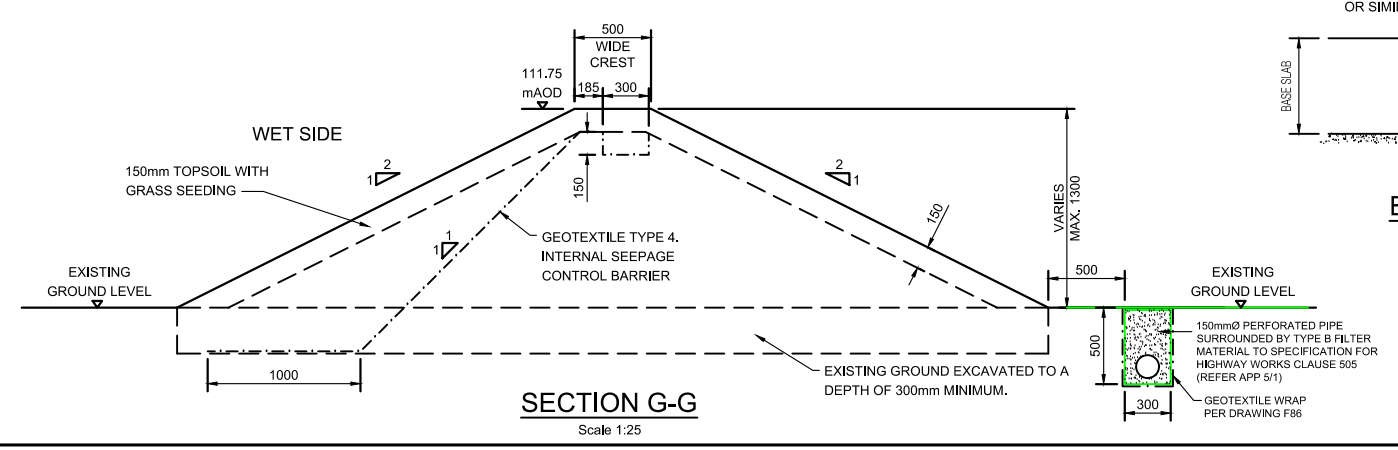
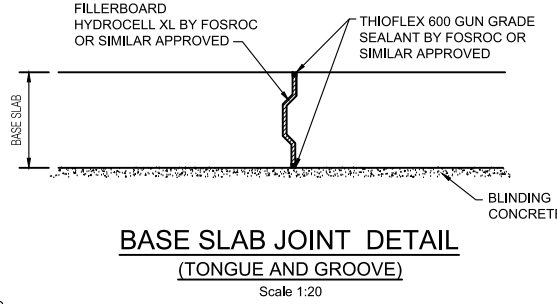
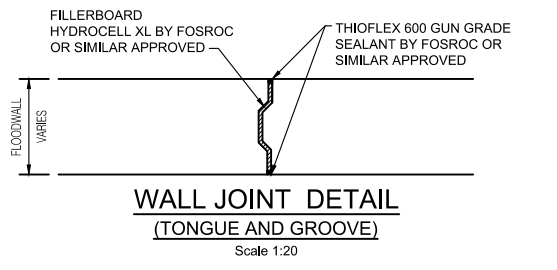
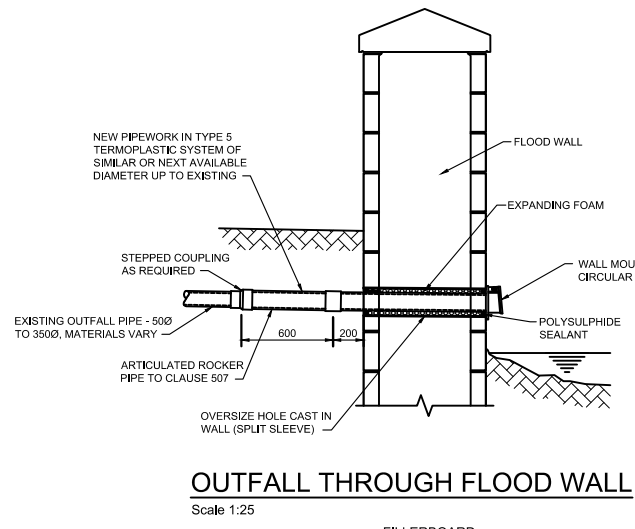
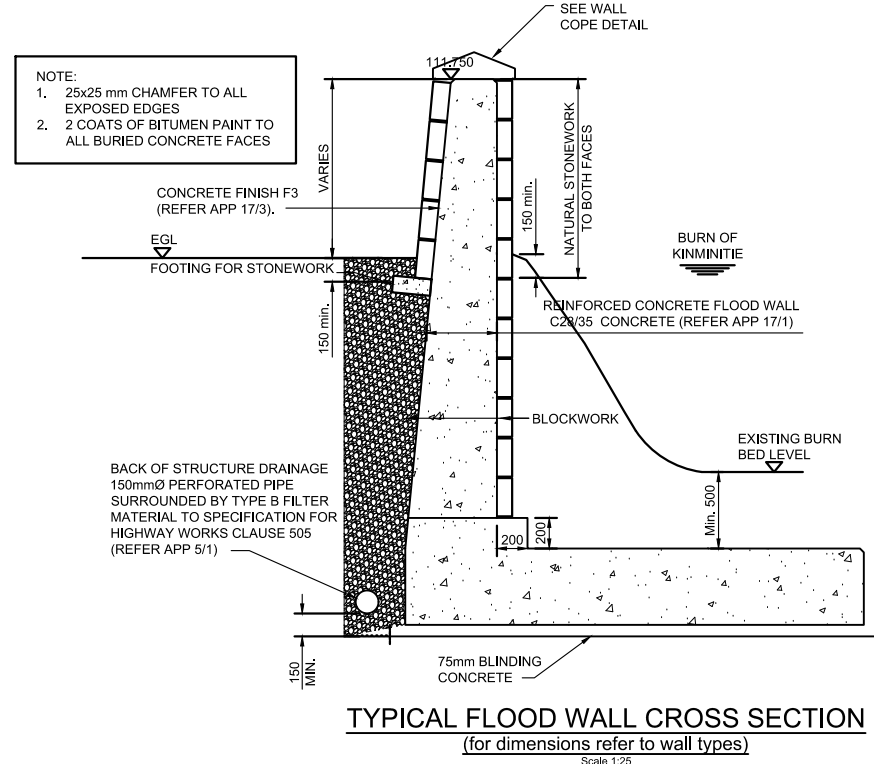
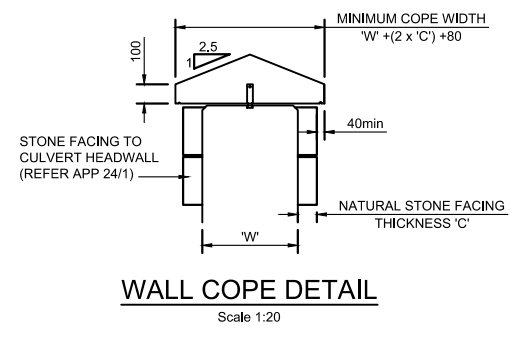
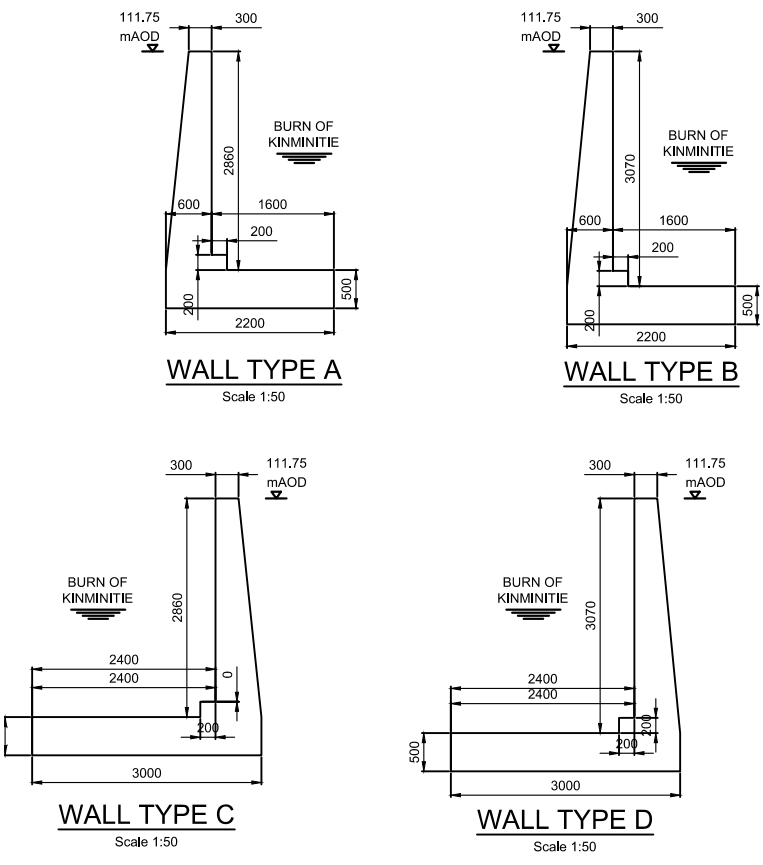
- Refer to Specification Appendix 17/1.

WATERPROOFING

- Refer to Specification Appendix 20/1.

STONEMWORK

- Stonework to be random rubble uncoursed in accordance with Specification Appendix 24/1.



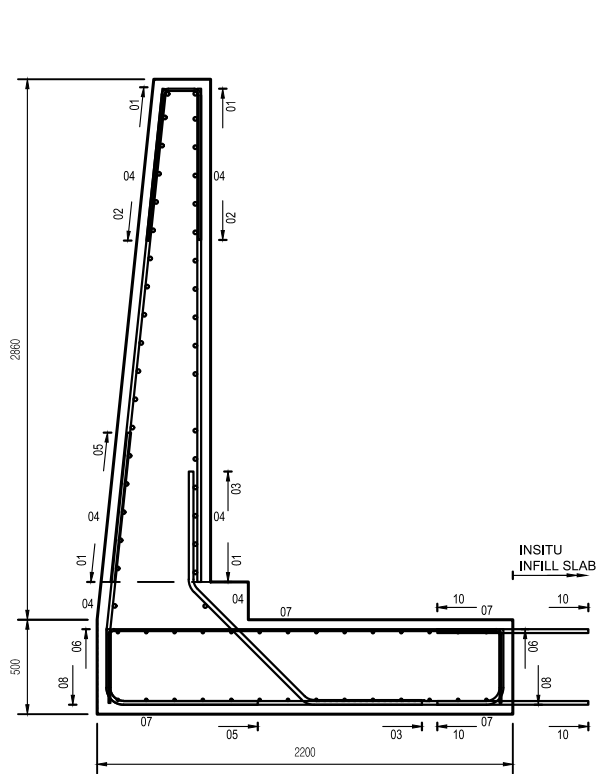
D	AS BUILT	PCE	GD	MAY 2017
C	JOINT DETAILS REVISED.	GD	DH	June '16
B	FLOOD WALLS REVISED, EMBANKMENT ADDED.	GD	DH	Feb '16
A	TENDER ISSUE	GD	DH	Aug '15
Rev.	Amendment Details	By	Crtd	Date

THE MORAY COUNCIL
DIRECT SERVICES - CONSULTANCY
PO BOX 6760
ELGIN IV30 1BX
TEL: 01343 543451

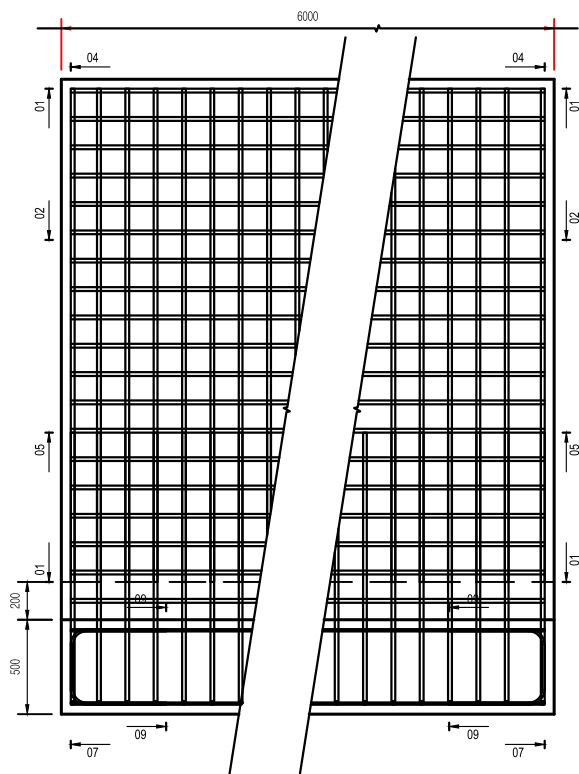
NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2

LOW ROAD FLOOD WALL DETAILS SHEET 1

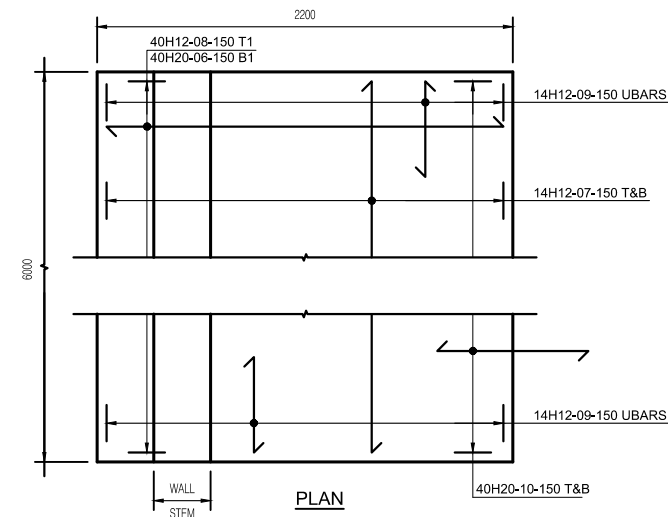
Drawn:	GD	Checked:	DH	Issued for:	CONSTRUCTION
Scales at A1:	AS SHOWN	Date:	August 2015		
Drawing Number:	CAP08019-302			Revision:	D
MORAY COUNCIL. ALL RIGHTS RESERVED					



CROSS SECTION

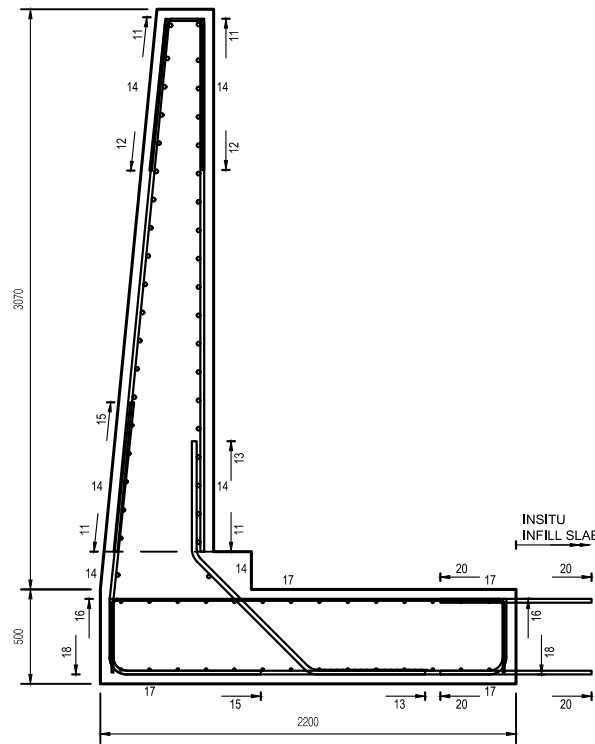


ELEVATION

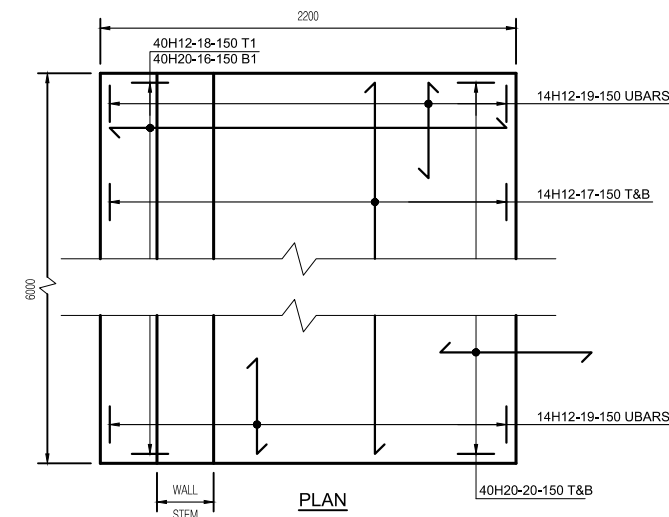


PLAN

WALL TYPE A
(typical 6m panel)
Scale 1:20

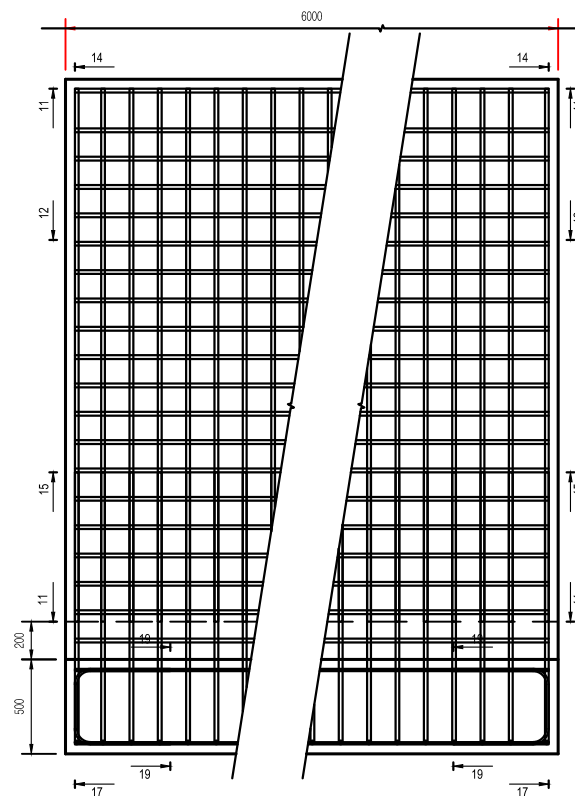


CROSS SECTION

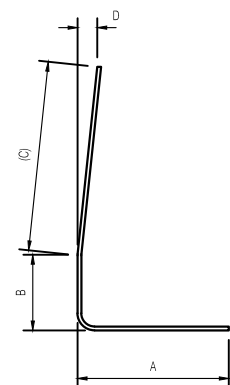


PLAN

WALL TYPE B
(typical 6m panel)
Scale 1:20



ELEVATION



SHAPE CODE 99

NOTES

GENERAL

- This drawing to be read in conjunction with all other relevant drawings and the Specification.
- All materials and Works must be in accordance with current British Standards or equivalent European Standards.
- All dimensions in millimetres unless noted otherwise.
- All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
- All co-ordinates are to Ordnance Survey data unless noted otherwise.
- All structural steelwork CE marked in accordance with BS EN 1090-1 : 2009

CONCRETE

- All concrete produced and placed in accordance with BS 8500-1, BS 8500-2 and BS EN 206-1.
- Concrete in accordance with BS 8500-1, with the following requirements:
 - Designed mix conforming to BS 8500-2
 - Compressive strength class C28/35
 - Max w/c ratio 0.45; min cement content 360kg/m³
 - Cement types III/B, IV/B-V
 - Max aggregate size 20mm
- Precast concrete culvert units designed to BS EN 1992 Eurocode 2: Part 2 - Concrete Bridges, BS EN 1991 Eurocode 1: Part 2 - Traffic Loads on Bridges, BS EN 13369 - precast concrete
- Concrete exposure classes related to environmental conditions XD3 to BS 8500-1/BS EN 206-1 with minimum 50mm cover to reinforcement.
- Traffic load: Load Model 1, Load Model 2 & Load Model 3 equivalent to SV80 (BD86/07) to BS EN 1991-2 & NA to BS EN 1991-2.

CJ = CONSTRUCTION JOINT
EJ = EXPANSION JOINT

- Refer to Specification Appendix 17/1.

WATERPROOFING

- Waterproofing: permitted BBA product and be hot applied. Refer to Specification Appendix 20/1.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services confirmed on site prior to any excavation including private field drainage.

Rev.	Amendment Details	By	Chk	Date
E	AS BUILT	PCE	GD	MAY 2017
D	BAR MARKS 09 AND 19 REVISED	GD	DH	June '16
C	BAR MARKS 09 AND 19 REVISED	GD	DH	June '16
B	SHAPE CODE 99 ADDED	GD	DH	May '16
A	CONSTRUCTION ISSUE	GD	DH	March '16


THE MORAY COUNCIL
 DIRECT SERVICES - CONSULTANCY
 PO BOX 6760
 ELGIN IV30 1BX
 TEL: 01343 543451

**NEWMILL FLOOD ALLEVIATION
SCHEME PHASE 2**

**LOW ROAD FLOOD WALLS
REINFORCEMENT DETAILS
SHEET 1 OF 2**

Drawn: GD Checked: DH Issued for: CONSTRUCTION

Scales at A1: AS SHOWN Date: March 2016

Drawing Number: CAP08019-304 Revision: E

NOTES

GENERAL

1. This drawing to be read in conjunction with all other relevant drawings and the Specification.
2. All materials and Works must be in accordance with current British Standards or equivalent European Standards.
3. All dimensions in millimetres unless noted otherwise.
4. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
5. All co-ordinates are to Ordnance Survey data unless noted otherwise.
6. All structural steelwork CE marked in accordance with BS EN 1090-1 : 2009

CONCRETE

7. All concrete produced and placed in accordance with BS 8500-1, BS 8500-2 and BS EN 206-1.
8. Concrete in accordance with BS 8500-1, with the following requirements:
 - Designed mix conforming to BS 8500-2
 - Compressive strength class C28/35
 - Max w/c ratio 0.45; min cement content 360kg/m³
 - Cement types IIIB, IVB-V
 - Max aggregate size 20mm
12. Precast concrete culvert units designed to BS EN 1992 Eurocode 2: Part 2 - Concrete Bridges, BS EN 1991 Eurocode 1: Part 2 - Traffic Loads on Bridges, BS EN 13369 - precast concrete
13. Concrete exposure classes related to environmental conditions XD3 to BS 8500-1/BS EN 206-1 with minimum 50mm cover to reinforcement.
14. Traffic load: Load Model 1, Load Model 2 & Load Model 3 equivalent to SV80 (BD86/07) to BS EN 1991-2 & NA to BS EN 1991-2.

CJ = CONSTRUCTION JOINT
EJ = EXPANSION JOINT

15. Refer to Specification Appendix 17/1.

WATERPROOFING

16. Waterproofing: permitted BBA product and be hot applied. Refer to Specification Appendix 20/1.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services confirmed on site prior to any excavation including private field drainage.

D	AS BUILT	PCE	GD	MAY 2017
C	BAR MARKS 29 AND 39 REVISED	GD	DH	June '16
B	SHAPE CODE 99 ADDED	GD	DH	May '16
A	CONSTRUCTION ISSUE	GD	DH	March '16
Rev.	Amendment Details	By	Crtd	Date

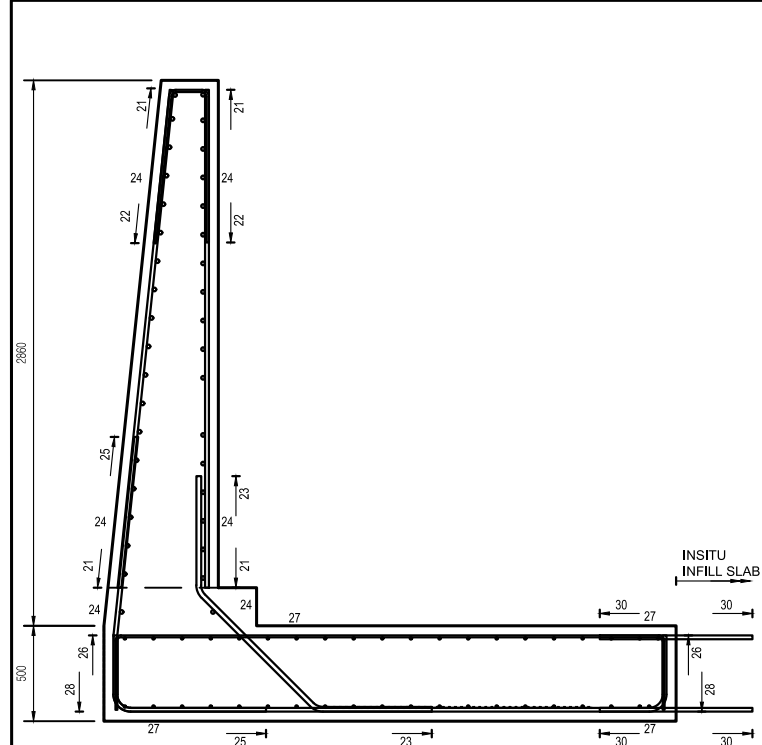
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DIRECT SERVICES - CONSULTANCY
PO BOX 6760
ELGIN IV30 1BX
TEL: 01343 543451

NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2

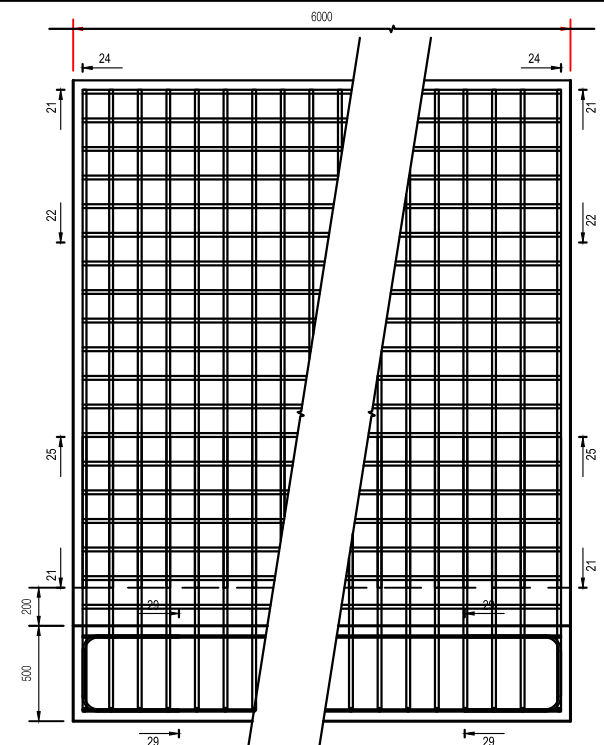
LOW ROAD FLOOD WALLS REINFORCEMENT DETAILS SHEET 2 OF 2

Drawn:	GD	Checked:	DH	Issued for:	CONSTRUCTION
Scales at A1:	AS SHOWN	Date:	March 2016		

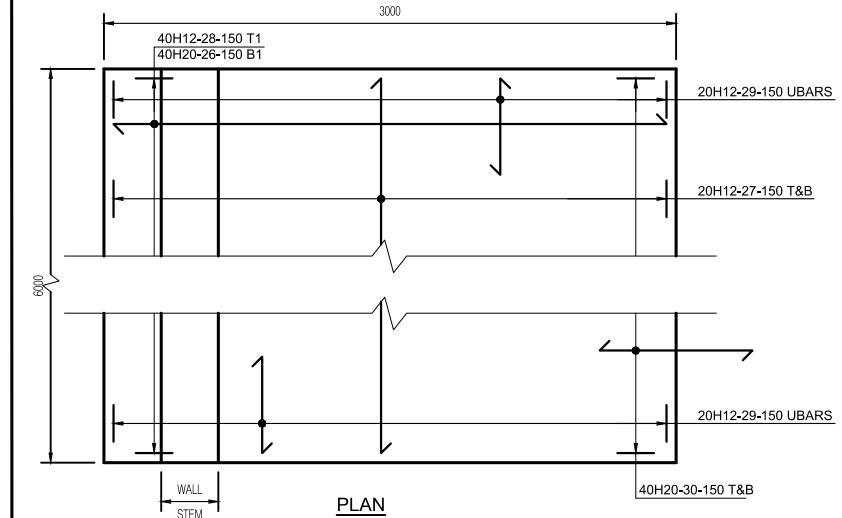
Drawing Number:	CAP08019-305	Revision:	D
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CROSS SECTION

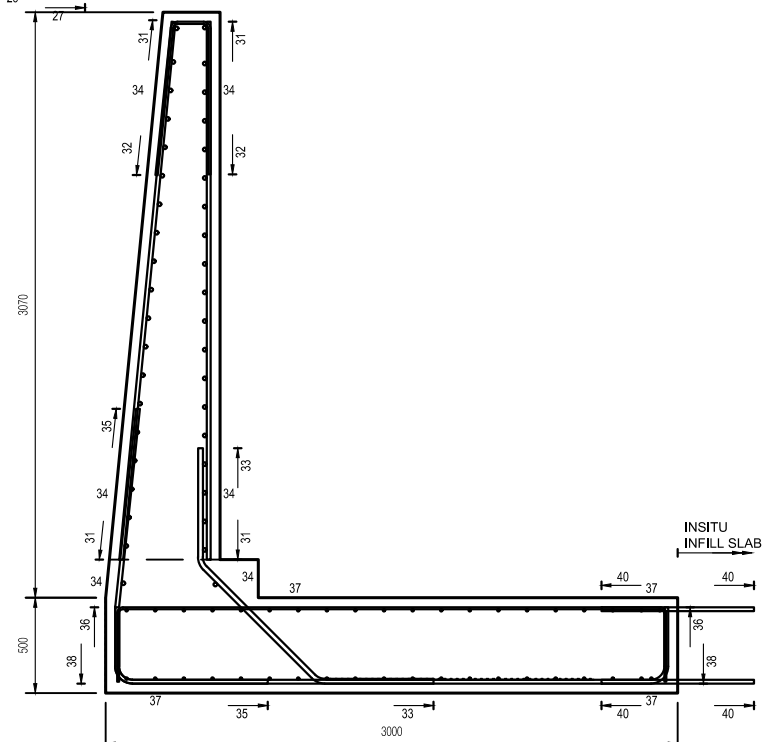


ELEVATION

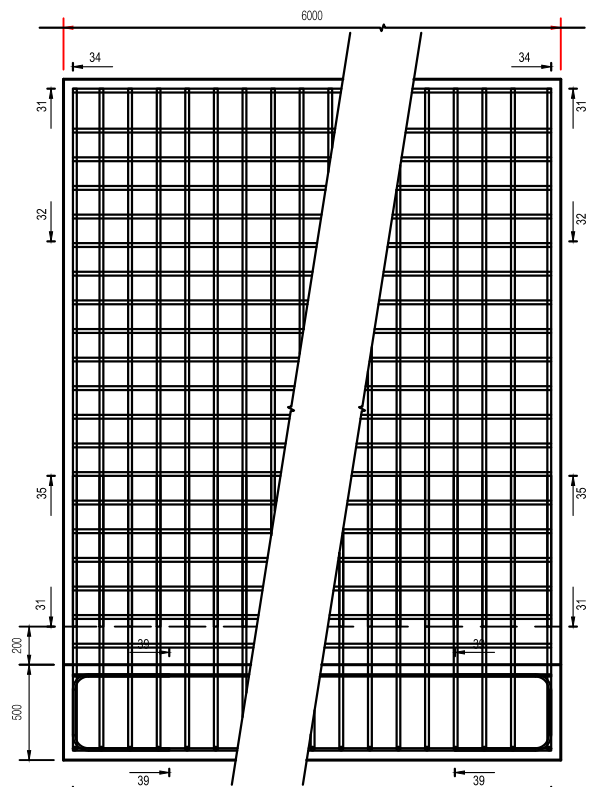


PLAN

WALL TYPE C
(typical 6m panel)
Scale 1:20

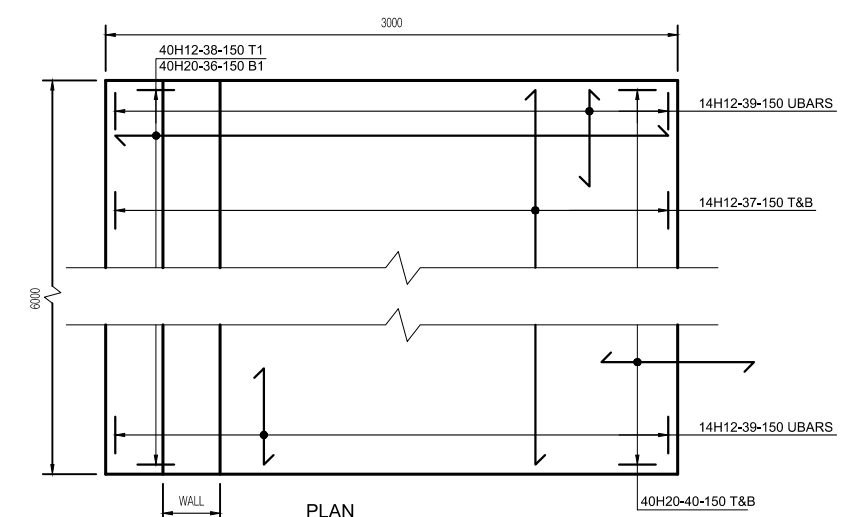


CROSS SECTION

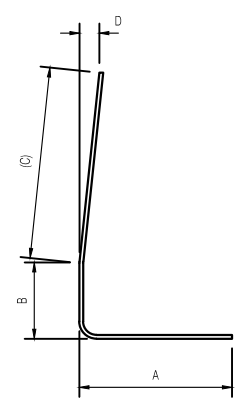


ELEVATION

WALL TYPE D
(typical 6m panel)
Scale 1:20



PLAN



SHAPE CODE 99

GENERAL

1. This drawing to be read in conjunction with all other relevant drawings and the Specification.
2. The Project Manager must be informed of any variations between these drawings and the actual details found on site prior to work starting.
3. The Specification and details must not be altered without written approval of the Project Manager.
4. The Contractor will provide the Project Manager with detailed Method Statements for all elements of the Works including Plant, Equipment, and Temporary Works necessary for the safe execution of the Works.
5. All materials and works must be protected from adverse weather conditions until fully cured. Timber must be kept dry at all times.
6. All materials and Works must be in accordance with current British Standards or equivalent European Standards.
7. All dimensions in millimetres unless noted otherwise.
8. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
9. All co-ordinates are to Ordnance Survey data unless noted otherwise.
10. All structural steelwork is to be CE marked in accordance with BS EN 1090-1 : 2009

GABION BASKET

1. Gabion baskets to be 1m x 1m x 1m constructed from 3.8mm dia wire welded in a grid format (aligned vertical & horizontal) with an opening of no greater than 75mm.
2. Gabion basket steel wire shall be to BSEN10218-2:1997 and in accordance to specification.
3. Galvanised and PVC coating to be applied to the entirety of the wire mesh after welding.
4. All joints and connections shall be formed with continuous 2.2 mm dia PVC coated zinc galvanised lacing wire as per manufacturers guidelines.
5. Gabion baskets to be installed at a minimum of 500mm below existing channel invert level.

ROCK FILL

6. Rock fill to gabion units shall be class 6G quarried granite stone with diameter not less than 1.5x the size of the mesh opening. Rock fill should be hand placed to minimise voids between rocks.

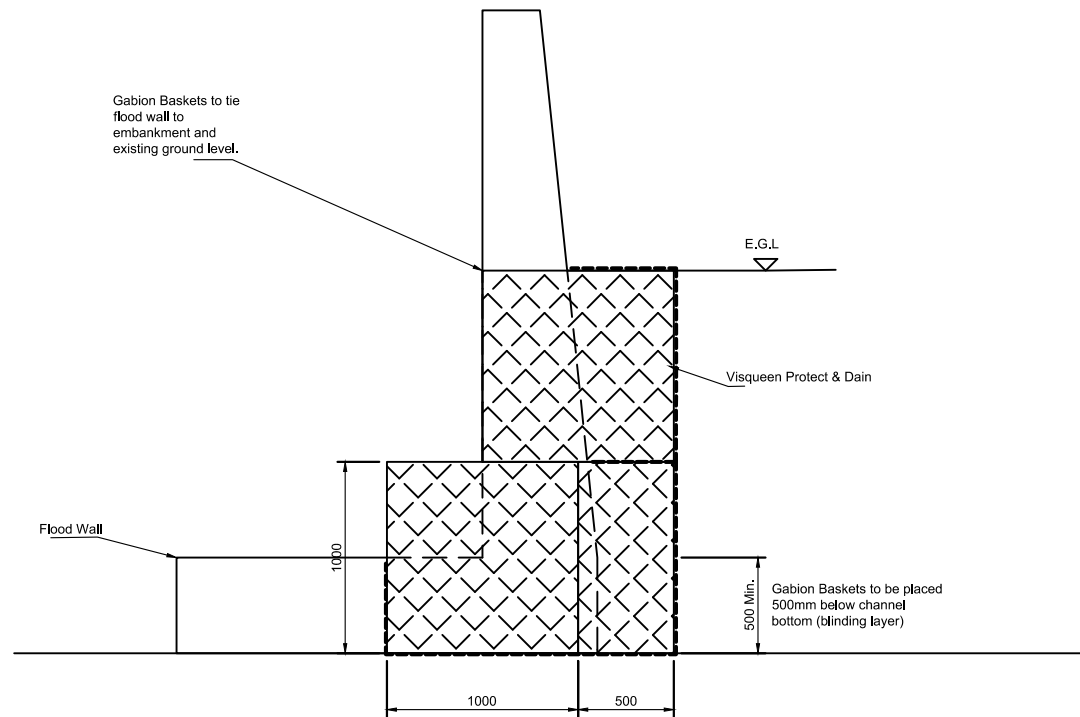
DPM

7. Visqueen Protect & Drain damp proof membrane to be placed between gabions and backfill. Where joints in DPM are required DPC jointing tape should be used.
8. Gabion DPM to tie in with embankment geotextile.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

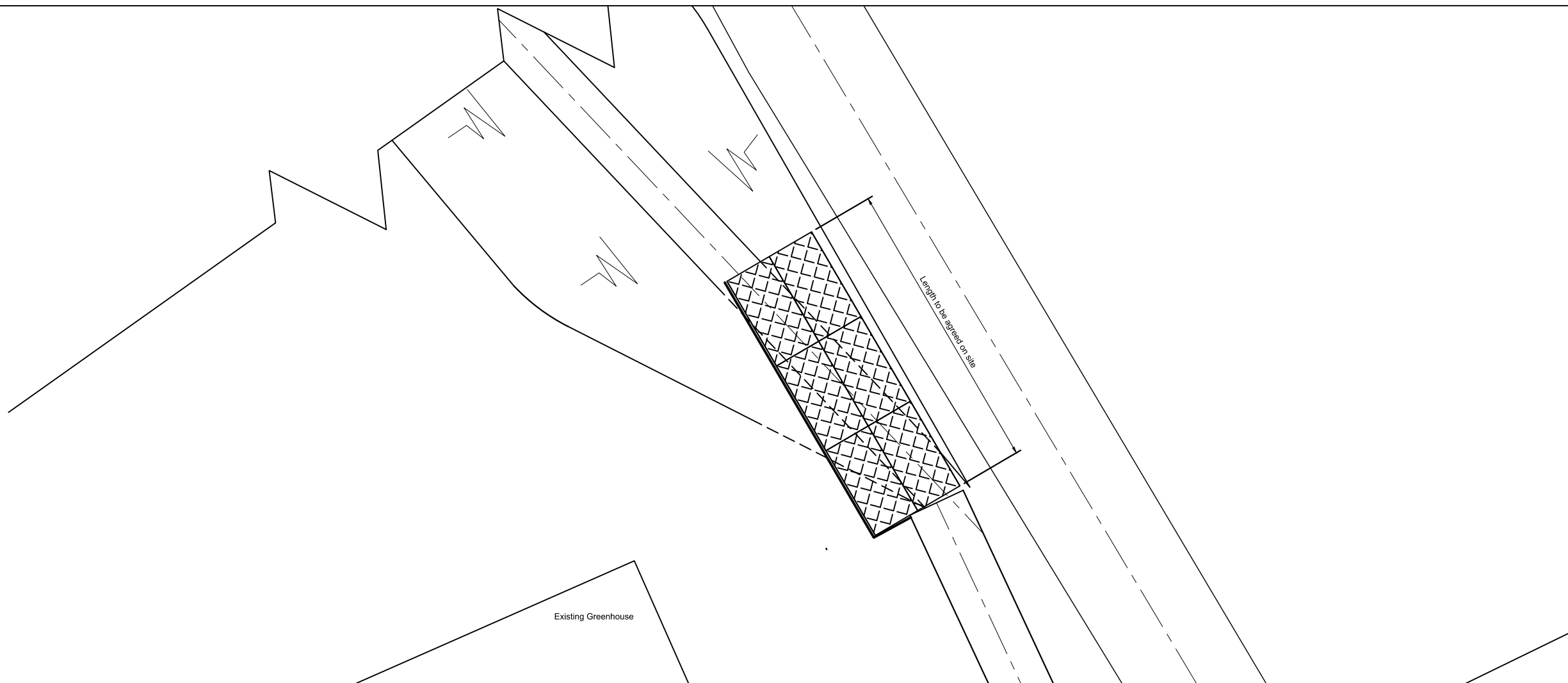
The information provided in this SHE box aims to provide information on residual risks to Safety, Health or Environment (SHE) associated with the construction activities shown on this drawing only. For further detail in respect of SHE risks (CDM Regulations 2015), please refer to the project specific design hazard log.

- Location of services to be confirmed on site prior to any excavation including private field drainage.
- The Contractor to take precautions against Giant Hogweed and Japanese Knotweed if present on the site.



GABION CROSS-SECTION

Scale 1:20



B	AS BUILT	PCE	GD	MAY 2017
A	CONSTRUCTION ISSUE	JR		AUGUST '16

Rev. Amendment Details By Crtd Date


THE MORAY COUNCIL
 DIRECT SERVICES - CONSULTANCY
 PO BOX 6760
 ELGIN IV30 1BX
 TEL: 01343 543451

NEWMILL FLOOD ALLEVIATION SCHEME PHASE 2

LOW ROAD FLOOD WALLS GABION TRANSITION SHEET 1 OF 1

Drawn: JR	Checked: GD	Issued for: CONSTRUCTION
Scales at A1: AS SHOWN	Date: AUGUST 2016	

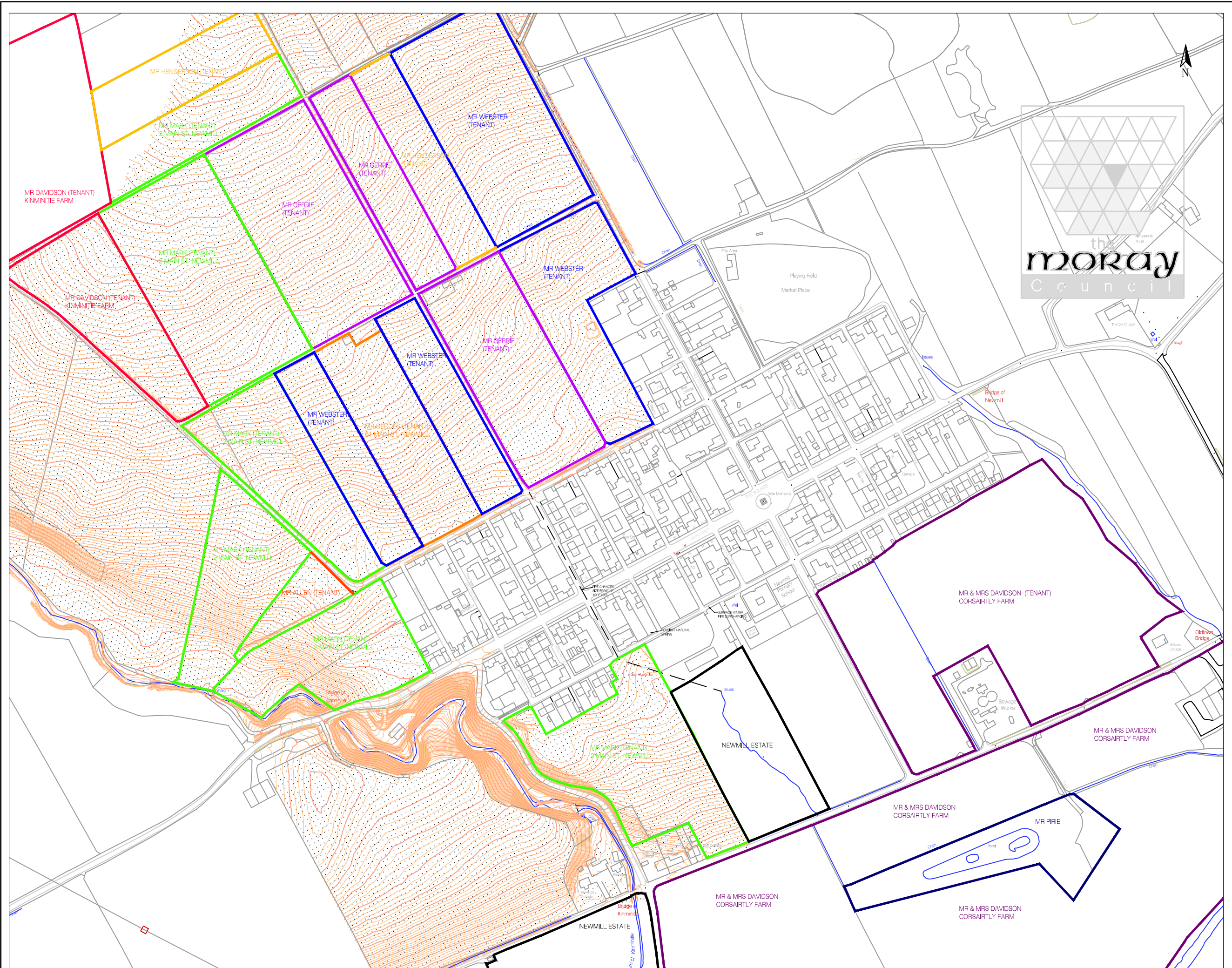
Drawing Number: CA08019-306	Revision: B
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APPENDIX B

Landownership

ID	NAME	1st LINE ADDRESS	2nd LINE ADDRESS	TOWN	POSTCODE
01	Newmill Estate	c/o Mr Acton, Alexander, George Ltd.	25A High Street	Banff	AB45 1AN
02	Mr Alistair Webster	25 Hill Street		Newmill	AB55 6TY
03	Mr Stanley Geddes	61 Main Street		Newmill	AB55 6UR
04	Mr Wilson Gerrie	4 Ardmore Cottages	Kennethmont	Huntly	AB54 4NH
05	Mr Alec Mark	2 Main Street		Newmill	AB55 6UR
06	Mr Charlie Davidson	Kinminitie Farm		Newmill	AB55 6XH
07	Mr Cecilia Laird	2 Back Street		Newmill	AB55 6UT
08	Mr John Henderson	90 Main Street		Newmill	AB55 6TS
09	Mr Martin Randall	Kenmore Low Road		Newmill	AB55 6JY
10	Mr William Barclay	Burnside Cottage Low Road		Newmill	AB55 6JY
11	Mr & Mrs Thomson	Rose Cottage Low Road		Newmill	AB55 6JY
12	Mr Allen				
13	Mr Gordon Rennie	4 South Street		Newmill	

Refer to drawing CAP08019/SK03 for location of landownership. Please note that Newmill Estate is the landowner for the majority of the site unless noted otherwise.



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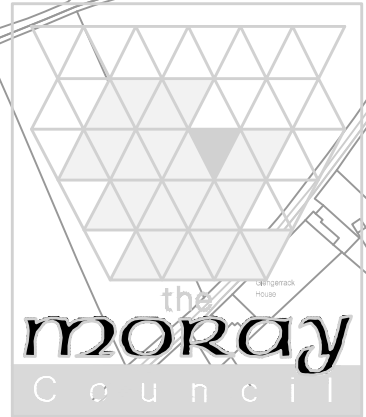
NJ 3.4

NOTES

- GENERAL**
1. All dimensions are in metres unless noted otherwise.
 2. All levels are in metres relative to Ordnance Datum Newlyn unless noted otherwise.
 3. All coordinates are to Ordnance Survey data unless noted otherwise.

KEY

- BUILDING
- WATERCOURSE
- CONTOURS
- ROAD/STREET



Rev.	Amendment Details	By	Date



NEWMILL FLOOD ALLEVIATION SCHEME PHASE II

LAND OWNERSHIP AND TENANT FARMER INFORMATION

Scale	1:1,250	Project	Information/Consultation
Drawing Number	CAP08019 SK03	Date	July 2014
Designed under an ISO 9001 registered Quality Management System, BS8 Certificate No. F533-14			

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