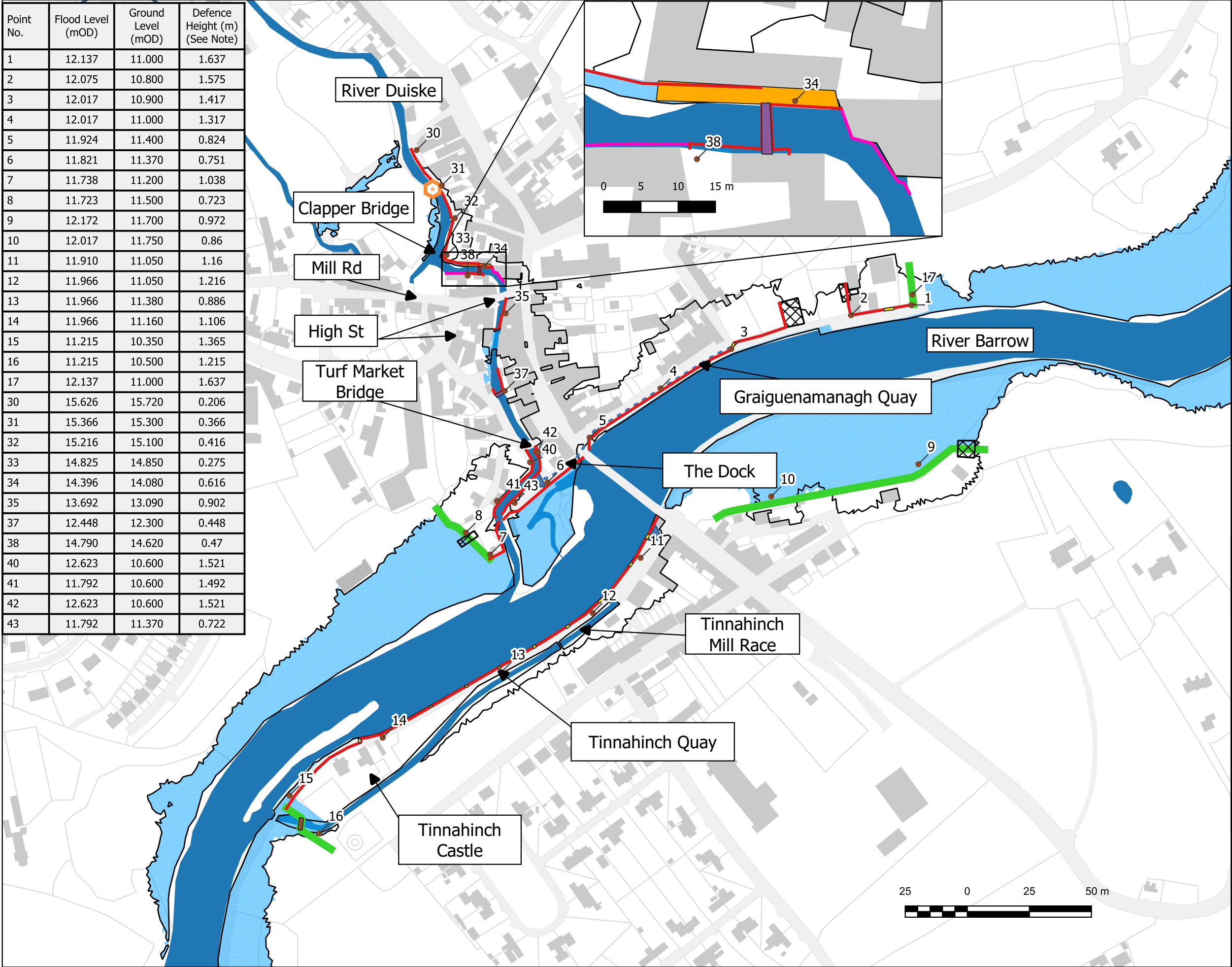


Appendix A – Options Figures

Point No.	Flood Level (mOD)	Ground Level (mOD)	Defence Height (m) (See Note)
1	12.137	11.000	1.637
2	12.075	10.800	1.575
3	12.017	10.900	1.417
4	12.017	11.000	1.317
5	11.924	11.400	0.824
6	11.821	11.370	0.751
7	11.738	11.200	1.038
8	11.723	11.500	0.723
9	12.172	11.700	0.972
10	12.017	11.750	0.86
11	11.910	11.050	1.16
12	11.966	11.050	1.216
13	11.966	11.380	0.886
14	11.966	11.160	1.106
15	11.215	10.350	1.365
16	11.215	10.500	1.215
17	12.137	11.000	1.637
30	15.626	15.720	0.206
31	15.366	15.300	0.366
32	15.216	15.100	0.416
33	14.825	14.850	0.275
34	14.396	14.080	0.616
35	13.692	13.090	0.902
37	12.448	12.300	0.448
38	14.790	14.620	0.47
40	12.623	10.600	1.521
41	11.792	10.600	1.492
42	12.623	10.600	1.521
43	11.792	11.370	0.722



NOTES

1. Do not scale from drawing

2. Layout of defence measures are indicative only.

3. Where Defence Height is zero, this indicates either a) ground level is greater than required defence level, or b) No defence at this location for given Option.

4. Defence Height = Flood Level + Freeboard (300mm for Hard Defences, 500mm for Soft Defences). Further refinement of freeboard will be undertaken once preferred option is identified.

LEGEND

Soft Defences

Hard Defences

Wall Improvements

Tinnahinch Mill Sluice Gates

Flood Gates

Storm Drain

Pump Station

Barrow - Raised Ground

Duiske Raised Ground

Replace Bridge

1% AEP Flood Extent - Defended

1% AEP Flood Extent - Undefended

Debris Trap

BYRNELOOBY

Client:

Kilkenny County Council

Project:

GRAIGUENAMANAGH - TINNAHINCH FLOOD RELIEF SCHEME

Title:

Option 1 - Raised Defences

Status: For Information

Map Area: Graiguenamanagh

Drawn by: RP

Oct 2022

Checked by: SH

Oct 2022

Approved by: SH

Oct 2022

Scale:

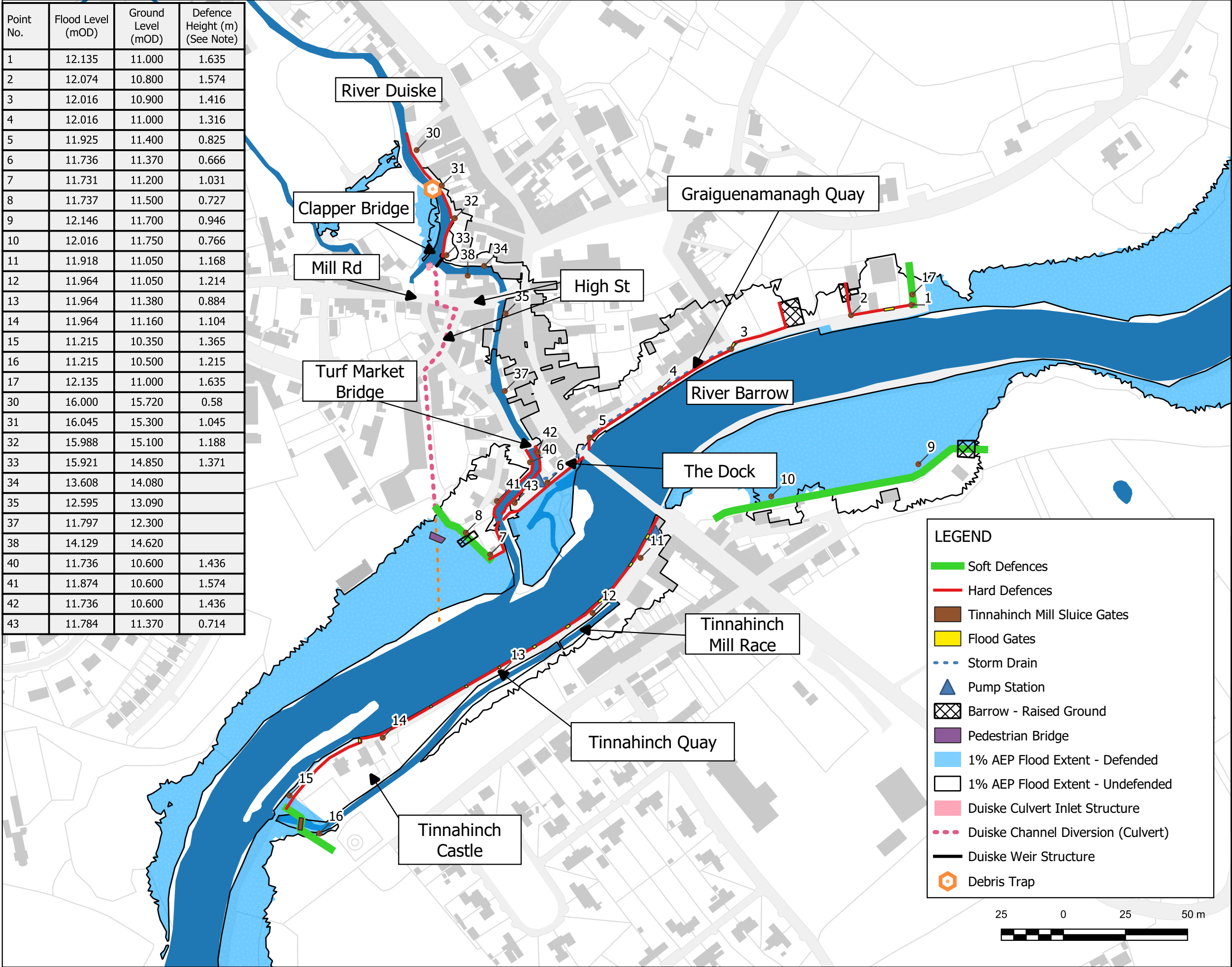
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Map No.: R009-01

Sheet: 1 of 1

Original @ A3

Point No.	Flood Level (mOD)	Ground Level (mOD)	Defence Height (m) (See Note)
1	12.135	11.000	1.635
2	12.074	10.800	1.574
3	12.016	10.900	1.416
4	12.016	11.000	1.316
5	11.925	11.400	0.825
6	11.736	11.370	0.666
7	11.731	11.200	1.031
8	11.737	11.500	0.727
9	12.146	11.700	0.946
10	12.016	11.750	0.766
11	11.918	11.050	1.168
12	11.964	11.050	1.214
13	11.964	11.380	0.884
14	11.964	11.160	1.104
15	11.215	10.350	1.365
16	11.215	10.500	1.215
17	12.135	11.000	1.635
30	16.000	15.720	0.58
31	16.045	15.300	1.045
32	15.988	15.100	1.188
33	15.921	14.850	1.371
34	13.608	14.080	
35	12.595	13.090	
37	11.797	12.300	
38	14.129	14.620	
40	11.736	10.600	1.436
41	11.874	10.600	1.574
42	11.736	10.600	1.436
43	11.784	11.370	0.714



NOTES

1. Do not scale from drawing
2. Layout of defence measures are indicative only.
3. Where Defence Height is zero, this indicates either a) ground level is greater than required defence level, or b) No defence at this location for given Option.
4. Defence Height = Flood Level + Freeboard (300mm for Hard Defences, 500mm for Soft Defences). Further refinement of freeboard will be undertaken once preferred option is identified.

BYRNELOOBY

Client:
Kilkenny County Council

Project:
GRAIGUENAMANAGH - TINNAHINCH
FLOOD RELIEF SCHEME

Title:
Option 2 - Raised Defences &
River Duiske Diversion

Status: For Information

Map Area: Graiguenamanagh

Drawn by: RP Oct 2022

Checked by: SH Oct 2022

Approved by: SH Oct 2022

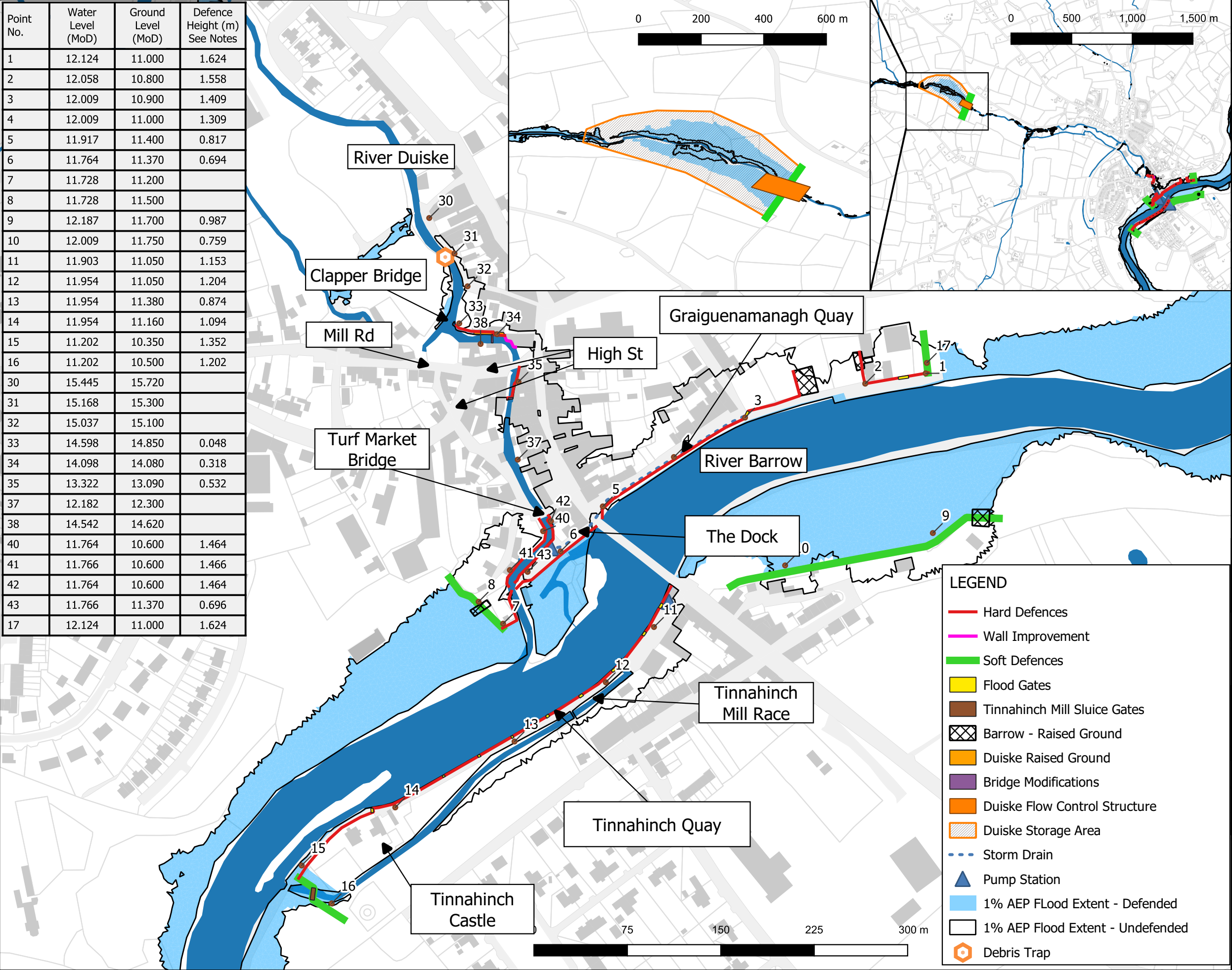
Map No.: R009-02

Scale:
1:3,000

Sheet: 1 of 1

Original @ A3

Point No.	Water Level (MoD)	Ground Level (MoD)	Defence Height (m) See Notes
1	12.124	11.000	1.624
2	12.058	10.800	1.558
3	12.009	10.900	1.409
4	12.009	11.000	1.309
5	11.917	11.400	0.817
6	11.764	11.370	0.694
7	11.728	11.200	
8	11.728	11.500	
9	12.187	11.700	0.987
10	12.009	11.750	0.759
11	11.903	11.050	1.153
12	11.954	11.050	1.204
13	11.954	11.380	0.874
14	11.954	11.160	1.094
15	11.202	10.350	1.352
16	11.202	10.500	1.202
30	15.445	15.720	
31	15.168	15.300	
32	15.037	15.100	
33	14.598	14.850	0.048
34	14.098	14.080	0.318
35	13.322	13.090	0.532
37	12.182	12.300	
38	14.542	14.620	
40	11.764	10.600	1.464
41	11.766	10.600	1.466
42	11.764	10.600	1.464
43	11.766	11.370	0.696
17	12.124	11.000	1.624



NOTES

- Do not scale from drawing
- Layout of defence measures are indicative only.
- Where Defence Height is zero, this indicates either a) ground level is greater than required defence level, or b) No defence at this location for given Option.
- Defence Height = Flood Level + Freeboard (300mm for Hard Defences, 500mm for Soft Defences). Further refinement of freeboard will be undertaken once preferred option is identified.

BYRNELOOBY

Client:
Kilkenny County Council

Project:
GRAIGUENAMANAGH - TINNAHINCH FLOOD RELIEF SCHEME

Title:
Option 3 - Raised Defences and River Duiske Storage

Status: For Information

Map Area: Graiguenamanagh

Drawn by: RP Oct 2022

Checked by: SH Oct 2022

Approved by: SH Oct 2022

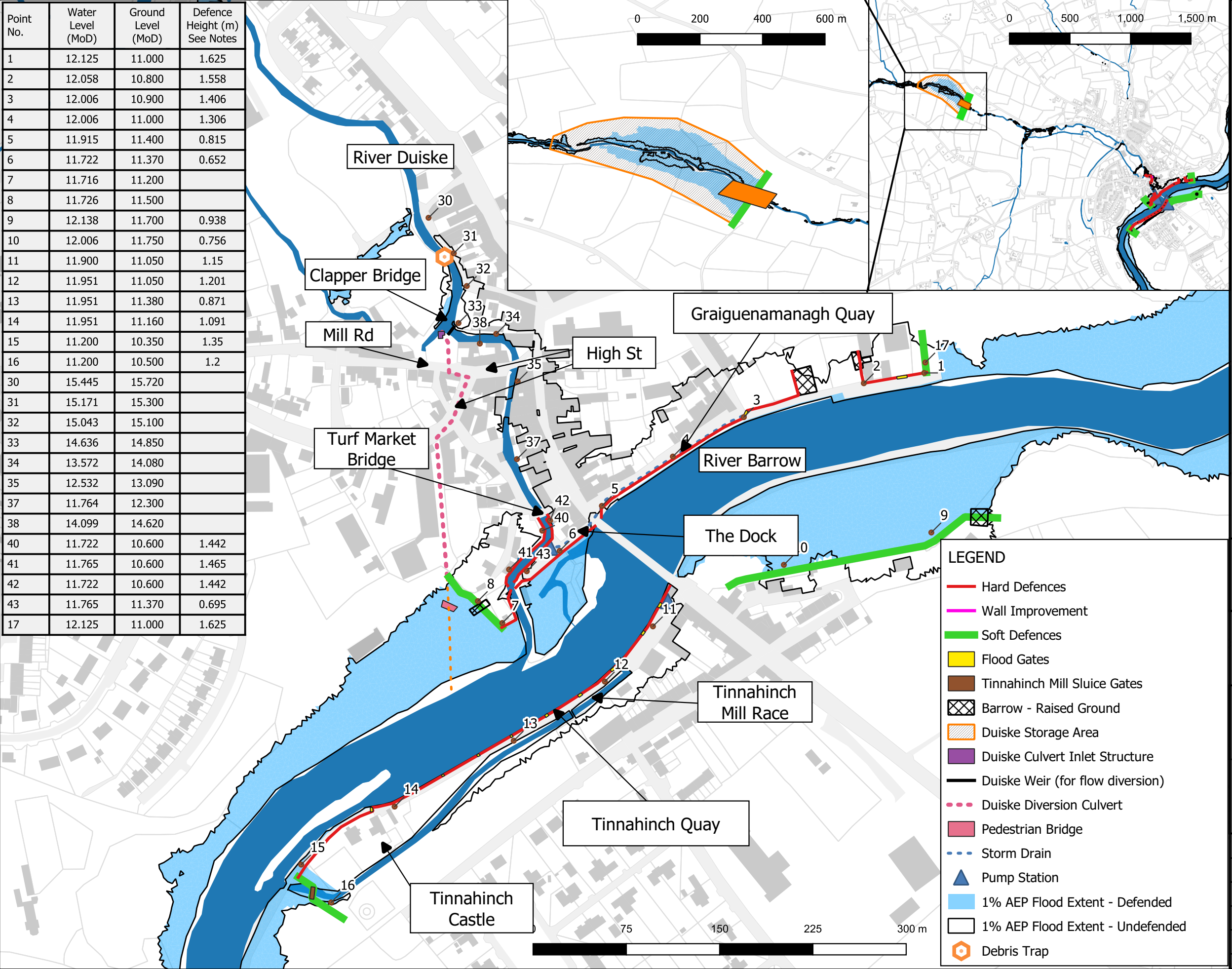
Map No.: R009-03

Scale:
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Original @ A3

Sheet: 1 of 1

Point No.	Water Level (MoD)	Ground Level (MoD)	Defence Height (m) See Notes
1	12.125	11.000	1.625
2	12.058	10.800	1.558
3	12.006	10.900	1.406
4	12.006	11.000	1.306
5	11.915	11.400	0.815
6	11.722	11.370	0.652
7	11.716	11.200	
8	11.726	11.500	
9	12.138	11.700	0.938
10	12.006	11.750	0.756
11	11.900	11.050	1.15
12	11.951	11.050	1.201
13	11.951	11.380	0.871
14	11.951	11.160	1.091
15	11.200	10.350	1.35
16	11.200	10.500	1.2
30	15.445	15.720	
31	15.171	15.300	
32	15.043	15.100	
33	14.636	14.850	
34	13.572	14.080	
35	12.532	13.090	
37	11.764	12.300	
38	14.099	14.620	
40	11.722	10.600	1.442
41	11.765	10.600	1.465
42	11.722	10.600	1.442
43	11.765	11.370	0.695
17	12.125	11.000	1.625



- NOTES
1. Do not scale from drawing
 2. Layout of defence measures are indicative only.
 3. Where Defence Height is zero, this indicates either a) ground level is greater than required defence level, or b) No defence at this location for given Option.
 4. Defence Height = Flood Level + Freeboard (300mm for Hard Defences, 500mm for Soft Defences). Further refinement of freeboard will be undertaken once preferred option is identified.

BYRNE**LOOBY**

Client:
Kilkenny County Council

Project:
**GRAIGUENAMANAGH - TINNAHINCH
FLOOD RELIEF SCHEME**

Title:
**Option 4 - Raised Defences and River
Duiske Storage and Diversion**

Status: For Information

Map Area: Graiguenamanagh

Drawn by: RP Oct 2022

Checked by: SH Oct 2022

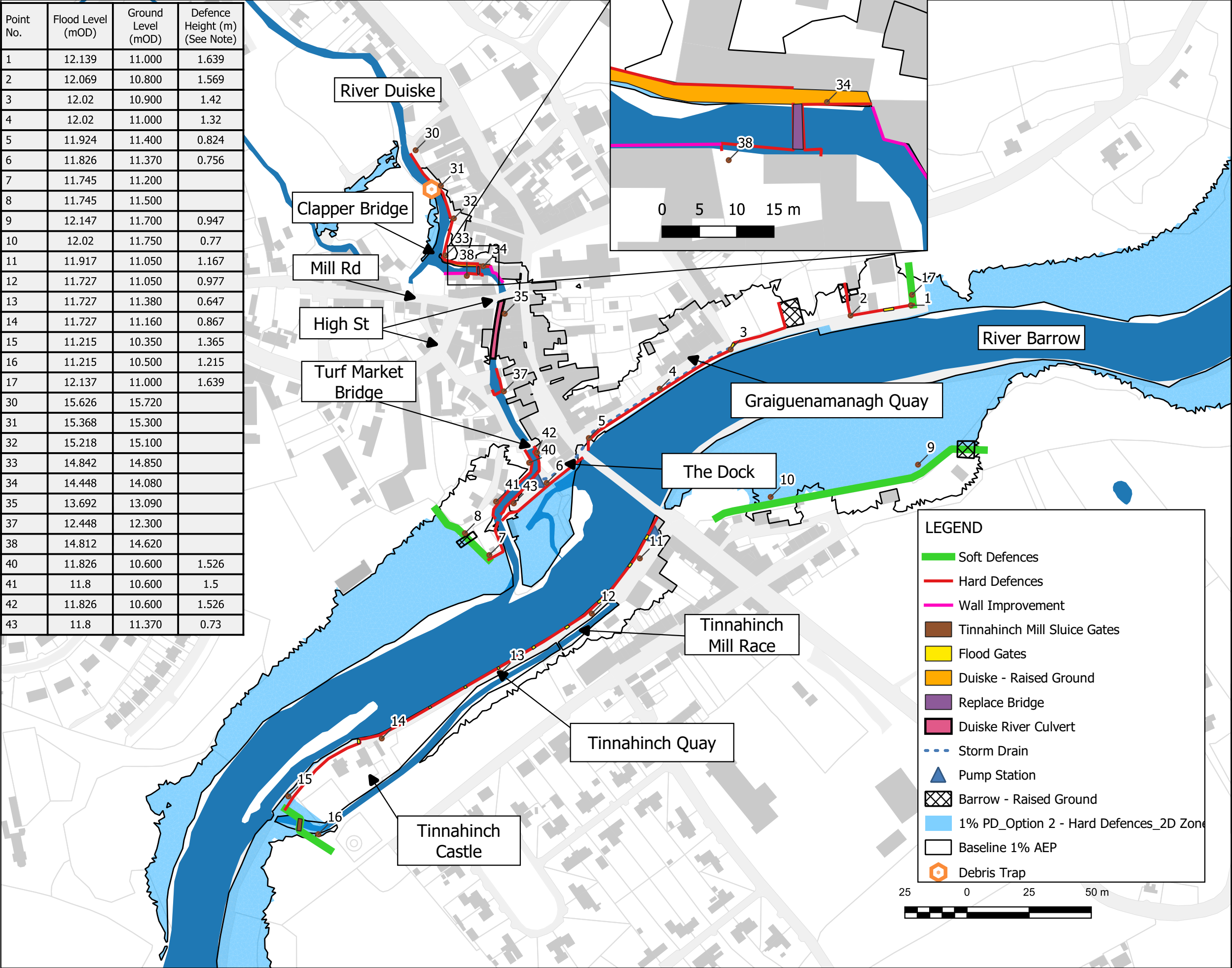
Approved by: SH Oct 2022

Scale:
1:3,000

Original @ A3

Map No.: R009-04 Sheet: 1 of 1

Point No.	Flood Level (mOD)	Ground Level (mOD)	Defence Height (m) (See Note)
1	12.139	11.000	1.639
2	12.069	10.800	1.569
3	12.02	10.900	1.42
4	12.02	11.000	1.32
5	11.924	11.400	0.824
6	11.826	11.370	0.756
7	11.745	11.200	
8	11.745	11.500	
9	12.147	11.700	0.947
10	12.02	11.750	0.77
11	11.917	11.050	1.167
12	11.727	11.050	0.977
13	11.727	11.380	0.647
14	11.727	11.160	0.867
15	11.215	10.350	1.365
16	11.215	10.500	1.215
17	12.137	11.000	1.639
30	15.626	15.720	
31	15.368	15.300	
32	15.218	15.100	
33	14.842	14.850	
34	14.448	14.080	
35	13.692	13.090	
37	12.448	12.300	
38	14.812	14.620	
40	11.826	10.600	1.526
41	11.8	10.600	1.5
42	11.826	10.600	1.526
43	11.8	11.370	0.73



NOTES

1. Do not scale from drawing

2. Layout of defence measures are indicative only.

3. Where Defence Height is zero, this indicates either a) ground level is greater than required defence level, or b) No defence at this location for given Option.

4. Defence Height = Flood Level + Freeboard (300mm for Hard Defences, 500mm for Soft Defences). Further refinement of freeboard will be undertaken once preferred option is identified.

BYRNELOOBY

Client:

Kilkenny County Council

Project:

GRAIGUENAMANAGH - TINNAHINCH FLOOD RELIEF SCHEME

Title:

Option 5 - Raised Defences and Duiske River Culvert

Status: For Information

Map Area: Graiguenamanagh

Drawn by: RP Oct 2022

Checked by: SH Oct 2022

Approved by: SH Oct 2022

Scale:

1:3,000

Original @ A3

Map No.: R009-05 Sheet: 1 of 1