




Appendix C


Structure Sheets


C.1 Structure Sheets


| | | |
|--------------------------------|---|----------|
| Name/model node label | 3OWE_1270_B | |
| River Reach | Owenacurra | |
| Type of structure | Pedestrian bridge South of the N25 dual carriageway bridge | |
| Description | Flat steel bridge | |
| Survey Reference | 3OWE_1270_B | |
| Irish Grid Reference(s) | 187896.84, 72568.66 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 0.03 mOD |
| | <i>Soffit level</i> | 3.5 mOD |
| | <i>Springing level</i> | 3.0 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|---|-----------|
| Name/model node label | 3OWE_1315B | |
| River Reach | Owenacurra | |
| Type of structure | N25 dual carriage way bridge | |
| Description | Flat concrete road bridge with two concrete supports on either side of the channel | |
| Survey Reference | CFRAMS 3OWE_1315.4 | |
| Irish Grid Reference(s) | 187907.72, 72606.52 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | -1.78 mOD |
| | <i>Soffit level</i> | 3.61 mOD |
| | <i>Springing level</i> | 3.56 mOD |
| | <i>Length</i> | |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|---|----------|
| Name/model node label | 3OWE_1983B | |
| River Reach | Owenacurra | |
| Type of structure | Pedestrian bridge | |
| Description | Flat foot bridge supported by a concrete columns raised above either side of the channel. | |
| Survey Reference | CFRAMS 3OWE_1983.4 | |
| Irish Grid Reference(s) | 187959.34, 73225.87 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 0.31 mOD |
| | <i>Soffit level</i> | 2.78 mOD |
| | <i>Springing level</i> | 2.74 mOD |
| | <i>Length</i> | |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |



| | | |
|--------------------------------|--|----------|
| Name/model node label | 3OWE_2281B | |
| River Reach | Owenacurra | |
| Type of structure | Road access bridge to the commercial development | |
| Description | Flat concrete road bridge with supports on either side of the channel and one in the centre. | |
| Survey Reference | CFRAMS 3OWE_2281 | |
| Irish Grid Reference(s) | 187992.48, 73508.48 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 1.1 mOD |
| | <i>Soffit level</i> | 3.49 mOD |
| | <i>Springing level</i> | 3.41 mOD |
| | <i>Length</i> | |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|---|----------|
| Name/model node label | 3OWE_2564B | |
| River Reach | Owenacurra | |
| Type of structure | Road bridge which links New Cork Road with the main area of the town | |
| Description | Concrete road bridge with 4 separate arches | |
| Survey Reference | CFRAMS 3OWE_2564.5 | |
| Irish Grid Reference(s) | 187926.53, 73776.38 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 2.52 mOD |
| | <i>Soffit level</i> | 6.66 mOD |
| | <i>Springing level</i> | 4.34 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|---|----------|
| Name/model node label | 3OWE_2634B | |
| River Reach | Owenacurra | |
| Type of structure | Road bridge which links the Market Green development with the main area of the town | |
| Description | Flat concrete bridge sitting on columns on either side of the river. | |
| Survey Reference | CFRAMS 3OWE_2633.6 | |
| Irish Grid Reference(s) | 187922.16, 73852.91 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 2.33 mOD |
| | <i>Soffit level</i> | 5.99 mOD |
| | <i>Springing level</i> | 5.74 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|--|----------|
| Name/model node label | 3OWE_3380B | |
| River Reach | Owenacurra | |
| Type of structure | Railway bridge | |
| Description | Flat steel bridge sitting on stone column supports on either side of the channel and in the centre of the channel. | |
| Survey Reference | CFRAMS 3OWE_3380.2 | |
| Irish Grid Reference(s) | 187563.59, 74263.32 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 4.77 mOD |
| | <i>Soffit level</i> | 7.46 mOD |
| | <i>Springing level</i> | 7.44 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|--|----------|
| Name/model node label | 3OWE_3521B | |
| River Reach | Owenacurra | |
| Type of structure | Old vehicular access bridge to the now abandoned industrial site north of the Railway line | |
| Description | Flat concrete bridge with supports at the side of the channel | |
| Survey Reference | CFRAMS 3OWE_3521.1 | |
| Irish Grid Reference(s) | 187499.94, 74377.46 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 5.4 mOD |
| | <i>Soffit level</i> | 7.78 mOD |
| | <i>Springing level</i> | 7.73 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | |
|--------------------------------|--|
| Name/model node label | 3OWE_3561B (Northern Relief Road Bridge) |
| River Reach | Owenacurra |
| Type of structure | Underside of the bridge consists of a series of horizontal RC beams |
| Description | Northern Relief Road Bridge |
| Survey Reference | |
| Irish Grid Reference(s) | 187507.69, 74404.15 |
| Included in model | Yes |
| Photograph | <p>Upstream face</p>  <p>Underneath the bridge</p>  |


| | | |
|---------------------|---|-----------|
| | <p>Downstream face</p>  | |
| Dimensions & levels | <i>Invert Level</i> | 4.153 mOD |
| | <i>Soffit level</i> | 8.43 mOD |
| | <i>Springing level</i> | 8.12 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|---|-----------|
| Name/model node label | 3OWE_4978B (Moore's Bridge – downstream) | |
| River Reach | Owenacurra | |
| Type of structure | Narrow vehicular bridge. Provides access to a number of private properties. | |
| Description | Flat concrete bridge supported by a number of concrete columns | |
| Survey Reference | CFRAMS 3OWE_4977.8 | |
| Irish Grid Reference(s) | 187361.22, 75148.55 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 11.2 mOD |
| | <i>Soffit level</i> | 13.53 mOD |
| | <i>Springing level</i> | 13.52 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|---|-----------|
| Name/model node label | 3OWE_4992B (Moore's Bridge – upstream) | |
| River Reach | Owenacurra | |
| Type of structure | Vehicular access bridge to the Tir Cluain Housing Estate | |
| Description | Flat concrete bridge | |
| Survey Reference | CFRAMS 3OWE_4992.3 | |
| Irish Grid Reference(s) | 187358.31, 75160.14 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 11.39 mOD |
| | <i>Soffit level</i> | 14.06 mOD |
| | <i>Springing level</i> | 13.95 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |

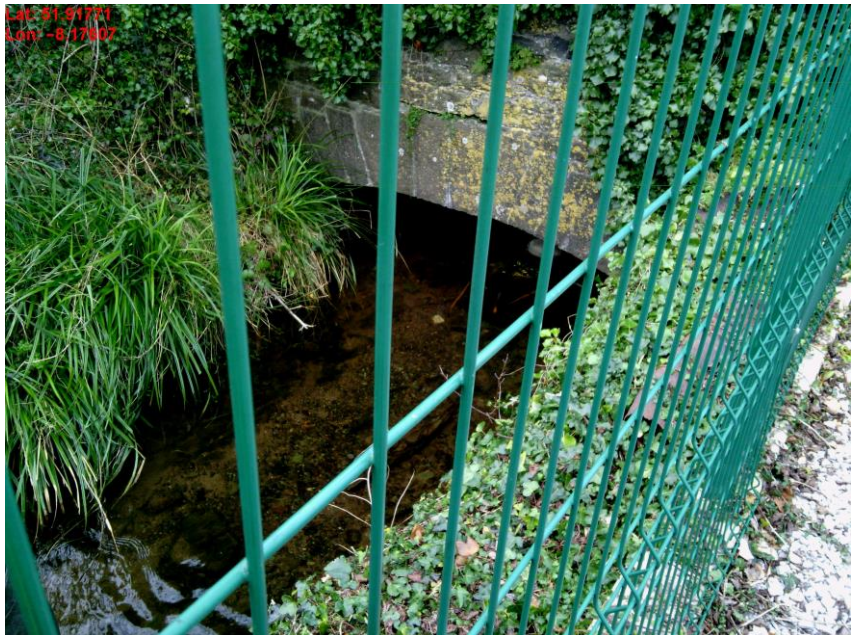
| | | |
|--------------------------------|---|------------|
| Name/model node label | ELF_24B | |
| River Reach | Elfordstown | |
| Type of structure | Vehicular access bridge/culvert | |
| Description | Flat concrete bridge with columns on either side of the river. | |
| Survey Reference | Infill Survey R6.00010 | |
| Irish Grid Reference(s) | 187665.5, 75652.71 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 16.601 mOD |
| | <i>Soffit level</i> | 17.44 mOD |
| | <i>Springing level</i> | 17.44 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|---|------------|
| Name/model node label | GLEN_160B | |
| River Reach | Glenathonacash | |
| Type of structure | Vehicular access bridge | |
| Description | Stone arch bridge | |
| Survey Reference | Infill Survey R5.00110 | |
| Irish Grid Reference(s) | 187364.56, 75400.43 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 12.974 mOD |
| | <i>Soffit level</i> | 15.26 mOD |
| | <i>Springing level</i> | 13.2 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|---|------------|
| Name/model node label | GLEN_1112B | |
| River Reach | Glenathonacash | |
| Type of structure | Vehicular access bridge/culvert | |
| Description | Flat concrete bridge | |
| Survey Reference | Infill Survey R5.01140 | |
| Irish Grid Reference(s) | 187636.67, 76144.99 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 21.995 mOD |
| | <i>Soffit level</i> | 24.02 mOD |
| | <i>Springing level</i> | 24.02 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|---|------------|
| Name/model node label | GLEN_1708B | |
| River Reach | Glenathonacash | |
| Type of structure | Vehicular access bridge | |
| Description | Flat concrete slab type culvert | |
| Survey Reference | Infill Survey R5.01720 | |
| Irish Grid Reference(s) | 187596.09, 76680.12 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 28.045 mOD |
| | <i>Soffit level</i> | 29.22 mOD |
| | <i>Springing level</i> | 29.22 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | |
|--------------------------------|--|
| Name/model node label | R10.215_CUL |
| River Reach | Owenacurra Millrace – downstream end |
| Type of structure | Culvert |
| Description | Irregular shaped culvert that formed part of the old Owenacurra Millrace |
| Survey Reference | Infill Survey |
| Irish Grid Reference(s) | 187909.44, 73970.42 |
| Included in model | Yes |
| Photograph | <p>Upstream face Lat: 51.91643 Lon: -8.17658</p>  |


| | | | |
|---------------------|--|-----------------|-------------------|
| | Downstream face | | |
| |  | | |
| Dimensions & levels | | <i>Upstream</i> | <i>Downstream</i> |
| | <i>Invert Level</i> | 3.02 mOD | 2.462 mOD |
| | <i>Soffit level</i> | 4.17 mOD | 3.612 mOD |
| | <i>Culvert Length</i> | 74.564 m | |
| Manning's n | Varies along the length | | |
| Modelled as | Full Arch Conduit unit | | |


| | | |
|--------------------------------|---|-----------|
| Name/model node label | R10.230 | |
| River Reach | Owenacurra Millrace | |
| Type of structure | Structure not presently in use. Unclear as to its original use. | |
| Description | Double arch stone bridge | |
| Survey Reference | Infill survey | |
| Irish Grid Reference(s) | 187889.49, 74009.90 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 6.048 mOD |
| | <i>Soffit level</i> | 7.79 mOD |
| | <i>Springing level</i> | 7.32 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch bridge unit | |


| | | |
|--------------------------------|---|-----------|
| Name/model node label | R10.250_B | |
| River Reach | Owenacurra Millrace | |
| Type of structure | Pedestrian bridge | |
| Description | Elevated walkway bridge | |
| Survey Reference | Infill Survey R10.00250 | |
| Irish Grid Reference(s) | 187894.84, 74019.16 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 5.983 mOD |
| | <i>Soffit level</i> | 7.57 mOD |
| | <i>Springing level</i> | 7.52 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | USBPR Bridge unit | |


| | | |
|--------------------------------|---|-----------|
| Name/model node label | R10.310_B | |
| River Reach | Owenacurra Millrace | |
| Type of structure | Vehicular access bridge within an apartment complex | |
| Description | Arched Bridge | |
| Survey Reference | Infill Survey R10.00310 | |
| Irish Grid Reference(s) | 187862.83, 74062.69 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 6.037 mOD |
| | <i>Soffit level</i> | 7.37 mOD |
| | <i>Springing level</i> | 7.15 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | |
|--------------------------------|---|
| Name/model node label | R10.560_CUL - R10.320_CUL |
| River Reach | Owenacurra Millrace |
| Type of structure | RC box culvert |
| Description | Culvert forms part of the old Owenacurra Millrace |
| Survey Reference | Infill Survey R10.00560 |
| Irish Grid Reference(s) | 187730.66, 74243.3 |
| Included in model | Yes |
| Photograph |  |


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|---------------------|--|----------|------------|
| |  | | |
| Dimensions & levels | | Upstream | Downstream |
| | Invert Level | 6.5 mOD | 6.05 mOD |
| | Soffit level | 7.32 mOD | 6.87 mOD |
| | Culvert Length | 250.3 m | |
| Manning's n | Varies across the length. | | |
| Modelled as | Rectangular Conduit unit | | |


| | | | |
|-------------------------|---|----------|------------|
| Name/model node label | R10.580_ACU- R10.580_BCU | | |
| River Reach | Owenacurra Millrace | | |
| Type of structure | Twin Box Culvert | | |
| Description | Double barrel culvert forms part of the old Owenacurra Millrace. | | |
| Survey Reference | Infill Survey | | |
| Irish Grid Reference(s) | 187711.56, 74282.84 | | |
| Included in model | Yes | | |
| Photograph |  | | |
| Dimensions & levels | | Upstream | Downstream |
| | Invert Level | 6.06 mOD | 6.06 mOD |
| | Soffit level | 6.86 mOD | 6.86 mOD |
| | Culvert Length | 17.691 m | |
| Manning's n | Varies along the length. | | |
| Modelled as | Rectangular Conduit unit | | |


| | | |
|--------------------------------|---|--|
| Name/model node label | R10.800_CUL - R10.600_CUL | |
| River Reach | Owenacurra Millrace – Entrance to the Millrace | |
| Type of structure | Culvert with sluice gate | |
| Description | Spring Arch stone culvert. | |
| Survey Reference | Infill Survey | |
| Irish Grid Reference(s) | 187577.34, 74420.24 | |
| Included in model | Yes | |
| Photograph |  <p>The top photograph shows a close-up view of a stone culvert structure. A metal pipe runs along the top of the stone wall, and a sluice gate is visible in the water. The bottom photograph shows a wider view of the culvert entrance, which is surrounded by dense green vegetation and tall grass. A surveying pole is visible on the right side of the frame.</p> | |


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|---------------------|---|-----------------|-------------------|
| | <p>Sluice gate at the entrance to the Mill race. At the time of our site visits it was in the permanently closed position. Water can therefore only enter the Mill race by overtopping of the structure.</p>  | | |
| Dimensions & levels | | <i>Upstream</i> | <i>Downstream</i> |
| | <i>Invert Level</i> | 7.5 mOD | 6.47 mOD |
| | <i>Soffit level</i> | 8 mOD | 6.97 mOD |
| | <i>Culvert Length</i> | 197.502 m | |
| Manning's n | Varies along the length. | | |
| Modelled as | Spring Arch Conduit unit | | |


| | | |
|--------------------------------|---|----------|
| Name/model node label | 3DUN_12B | |
| River Reach | Dungourney | |
| Type of structure | Vehicular road bridge | |
| Description | Single span flat deck concrete bridge | |
| Survey Reference | CFRAMS 3DUN_12 | |
| Irish Grid Reference(s) | 188077.75, 73161.25 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 0.14 mOD |
| | <i>Soffit level</i> | 1.84 mOD |
| | <i>Springing level</i> | 1.83 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|--------------------------------|---|----------|
| Name/model node label | 3DUN_295B (Lewis Bridge) | |
| River Reach | Dungourney | |
| Type of structure | Vehicular road bridge at Baby's Walk | |
| Description | Stone single arch bridge | |
| Survey Reference | CFRAMS 3DUN_295 | |
| Irish Grid Reference(s) | 188297.72, 73284.93 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 0.66 mOD |
| | <i>Soffit level</i> | 3.21 mOD |
| | <i>Springing level</i> | 2.54 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|-------------------------|---|----------|
| Name/model node label | 3DUN_478B | |
| River Reach | Dungourney | |
| Type of structure | Pedestrian access bridge | |
| Description | Singe stone arch bridge | |
| Survey Reference | CFRAMS 3DUN_478 | |
| Irish Grid Reference(s) | 188465.69, 73372.25 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 1.58 mOD |
| | <i>Soffit level</i> | 3.67 mOD |
| | <i>Springing level</i> | 2.59 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |


| | | |
|-------------------------|--|----------|
| Name/model node label | 3DUN_642 | |
| River Reach | Dungourney | |
| Type of structure | Arched Bridge | |
| Description | Flat Wooden foot bridge supported by concrete columns at the side of the channel. | |
| Survey Reference | CFRAMS 3DUN_642 | |
| Irish Grid Reference(s) | 188626, 73394 | |
| Included in model | No. Justification for doing so: (1) improvement in model stability along this reach (2) Very limited impact on the hydraulics given its size (3) Area adjacent to the bridge is grassland with no critical receptors such that any localised head loss will not impact damages or modelled flood extent. | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 1.75 mOD |
| | <i>Soffit level</i> | 3.16 mOD |
| | <i>Springing level</i> | 3.29 mOD |
| Manning's n | N/a | |
| Modelled as | Not modelled | |

| | | |
|-------------------------|--|----------|
| Name/model node label | 3DUN_696 | |
| River Reach | Dungourney | |
| Type of structure | Local pedestrian access bridge | |
| Description | Flat Wooden foot bridge supported by stone columns at the side of the channel. | |
| Survey Reference | CFRAMS 3DUN_696 | |
| Irish Grid Reference(s) | 188687.5, 73401.86 | |
| Included in model | No. Justification for doing so: (1) improvement in model stability along this reach (2) Very limited impact on the hydraulics given its size (3) Area adjacent to the bridge is grassland with no critical receptors such that any localised head loss will not impact damages or modelled flood extent. | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 1.91 mOD |
| | <i>Soffit level</i> | 3.53 mOD |
| | <i>Springing level</i> | 3.49 mOD |
| Manning's n | N/a | |
| Modelled as | Not modelled | |

| | | |
|-------------------------|---|----------|
| Name/model node label | 3DUN_1332B | |
| River Reach | Dungourney | |
| Type of structure | Local access bridge | |
| Description | Flat concrete slab footbridge. | |
| Survey Reference | CFRAMS 3DUN_1330.7 | |
| Irish Grid Reference(s) | 189207.42, 73700.27 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 3.32 mOD |
| | <i>Soffit level</i> | 4.87 mOD |
| | <i>Springing level</i> | 4.73 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |

| | | |
|-------------------------|---|-----------|
| Name/model node label | 3DU1_1075B | |
| River Reach | Dungourney | |
| Type of structure | Local access road bridge | |
| Description | Stone double square opening bridge | |
| Survey Reference | CFRAMS 3DU1_1075 | |
| Irish Grid Reference(s) | 190499.13, 74673.57 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Invert Level</i> | 8.14 mOD |
| | <i>Soffit level</i> | 10.32 mOD |
| | <i>Springing level</i> | 10.29 mOD |
| Manning's n | Bed n of structure section = 0.032. | |
| Modelled as | Arch Bridge unit | |

| | | |
|--------------------------------|---|-----------|
| Name/model node label | 3OWE_3616 | |
| River Reach | Owenacurra | |
| Type of structure | Broad crested weir upstream of the Northern Relief Road. Constructed to facilitate water diversion into the Owenacurra mill race. | |
| Description | Broad crested weir with notch in centre | |
| Survey Reference | CFRAMS 3OWE_3616U | |
| Irish Grid Reference(s) | 187550.36, 74467.5 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Crest elevation</i> | 7.507 mOD |
| | <i>Notch elevation</i> | 6.594 mOD |
| | <i>Notch Width</i> | 1.462 m |
| Weir Coefficient | 1.5 | |
| Modelled as | Spill unit | |

| | | |
|--------------------------------|--|-----------|
| Name/model node label | R10.00220_D | |
| River Reach | Owenacurra Millrace | |
| Type of structure | Weir at downstream end | |
| Description | Broad crested weir. Left hand section of the weir is raised above the right hand side. | |
| Survey Reference | Infill Survey | |
| Irish Grid Reference(s) | 187896.95, 73995.1 | |
| Included in model | Yes | |
| Photograph |  | |
| Dimensions & levels | <i>Crest elevation</i> | 6.419 mOD |
| | <i>Notch elevation</i> | 6.165 mOD |
| | <i>Notch Width</i> | 1.7 m |
| Weir Coefficient | 1.2 | |
| Modelled as | Spill unit | |