NEC3 engineering and construction contract (ECC)

Works Information

Project / Contract information

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Author	Maximillian Clausen

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Cyfoeth Naturiol Cymru Natural Resources Wales	**Part 2: Non-returnable Documents** **NEC – ECC 3rd Ed.**	**Works Information**

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Definitions List

Term	Description
CESWI	Civil Engineering Specification for the Water Industry, 7th Edition
EA MTR	Environment Agency Minimum Technical Requirements
SHW	Specification for Highway Works

Preamble

This Works Information describe and specify the *works.* For details of the technical standards and the list of drawings used see **WI 2000**, *Employer's* work specification.

WI 100 Description of the *works*

WI 101 Project objectives

1. The project objectives are:

   To protect Porthloo lane from erosion and undermining and to reduce the risk of overtopping and coastal flooding to the domestic and commercial properties located behind the beach. The scheme also aims to decrease the vulnerability of Lower Moors SSSI to saline intrusion during storm events.

WI 102 Rock Armour Revetment

1. The rocks used in the construction of the revetment shall be handled and placed in accordance with the requirements of the Revetment Specification. See Appendix B: UA008878-ARC-XX-XX-SP-CE-0831-P1-Porthloo Rock Revetment Specification.
2. Setting Out Points (SoP) correspond to the rear of the crest and the intersection between the revetment face and the toe.
3. Contractors must neither excavate nor construct any closer than 3 m to the water main underneath the main road. This may require minor modification of the works at Setting Out Point 13 on the Porthloo Revetment Plan (UA008878-ARC-XX-XX-DR-CE-0220-P4-PorthlooRevetmentPlan), which also marks the location of the water main.
4. The revetment shall be underlain with a geotextile, ensuring it meets the properties stated in the Rock Specification (see Appendix B).
5. Where the geotextile is wrapped around the foremost rock of the toe, it shall be lapped back by a minimum of 2000mm and trapped in place by the rocks which form the toe.
6. The crest & toe top level width shall be 5 x D_{n50} (median nominal rock diameter) or 4500mm whichever is greater.
7. The revetment armour layer thickness, including the crest and toe, shall be a minimum of 2000mm.
8. Revetment slope grade shall vary and smoothly transition along its length from 1 in 3 at the at the extremities of the roundheads to 1 in 1:5 at its centre.

WI 103 Roundheads

1. The northern roundhead shall butt-up against the cliff face with the top toe level being 4.50mAOD and the top crest level being 6.70mAOD.
2. The southern roundhead shall be built into the existing engineered defence and shall <u>not</u> butt-up against the existing vertical timber wall which retains the sand backfill. Rather, the rocks shall be placed so they are self-supporting within the revetment ensuring they meet the stability requirements stated in Rock Revetment Specification (Appendix B). The roundhead crest and toe levels shall be the same the northern roundhead.

WI 104 Existing Engineered Dune

1. The existing defence is believed to comprise vertical timber sleepers (~1.6m above EGL), braced by a horizontal whaling beam at its rear and cast into a concrete foundation of an unknown depth. The dune has a sloped front face and a level top surface covered by a geotextile planted with marram grass and backfilled with sand.

2. The existing engineer dune defence shall be excavated to accommodate the new southern roundhead. It is likely the timber wall foundations will become exposed during the excavation and the *Contractor* will ensure its continued stability.

3. Once the rock roundhead has been constructed, the excavation shall be backfilled with site won material.

WI 105 Retaining Wall

1. A precast retaining wall shall be constructed at rear of the revetment between Setting Out Points (SoP) 18 & 19. The units shall butt against the existing timber retaining wall to ensure the backfill is retained. The proposed wall shall have a finished height of 6.75mAOD to match the neighbouring timber wall of 6.75mAOD.

2. L-shaped precast units shall be founded on a reinforced concrete foundation. The concrete class for the foundation shall be RC20/25 CEM 1 with 70mm cover to all faces. The concrete class and cover requirements can be modified in-line with the requirements of BS6349, Table 2, Exposure Class: XS1.

3. The formation level shall be inspected by a geotechnical engineer or competent person to identify ‘soft-spots’. Alternatively, the formation level shall be proof rolled and ‘soft spots’ identified, excavated and backfilled with compacted site won granular material.

4. The formation level to be compacted to 95% of Proctor Maximum Dry Density, as determined by BS1377, Part 4.

5. The foundation formation level shall comprise 100mm of Type 1 (Clause 803) compacted in accordance with Table 8/4, of the SHW and underlain with a geotextile: Terram 1000 or similar approved.

6. The units shall be bolted into the foundation with a 580mm long stainless-steel threaded bar, washer and nyloc nut. A 50mm diameter hole shall be cast into the heel of the units with the position.

7. The units shall be cast with a Reckli 2/23 Alster (Butted Joint Boards) finish.

8. The retaining wall unit design assumes C40/50 CEM1 concrete with 70mm cover to all faces. The concrete class and cover requirements can be modified in-line with the requirements of BS6349-1-4, Table 2, Exposure Class: XS1.

9. The precast manufacturer shall be responsible for specification, designation and design of the lifting eyes, chamfers, orifices for grouting and bolt-through connection, and toggle joints between the precast units.

10. The *Contractor* will shall be responsible for the stability, lifting, positioning and transportation of the of the precast units during the temporary state/ construction phase of the works.

WI 106 Manhole Chamber

1. An existing manhole chamber is assumed to be disused and shall be removed where it interfaces with the proposed revetment. See Revetment Plan (UA008878-ARC-XX-XX-DR-0220).

WI 200 General constraints on how the *Contractor* provides the *works*

WI 201 General constraints

1. The *Contractor* shall comply with the following constraints in addition to those identified in the CESWI & EA Minimum Technical Requirements.

WI 202 Site Access

1. Access to site is via Porthloo lane. This road shall remain open to traffic during the works.

WI 203 Working Area

1. The *Contractor's* working area is indicated on drawing UA008878-ARC-XX-XX-DR-CE-0220

2. If the C*ontractor* wishes to modify these areas, he shall obtain written permission from the *Project Manager.*

WI 204 Parking

1. The *Contractor* shall provide adequate parking for site-based personnel and visitors within the working area. No parking is allowed outside of this area, unless permission is obtained from the *Project Manager*.

WI 205 Working Hours

1. No additional constraints to 1.27 EA MTR and in terms of local limits on working hours.

WI 206 Operational constraints

1. Porthloo lane shall remain open to vehicular traffic for the duration of the contact.

2. The residential properties located behind the beach shall have unhindered pedestrian and vehicular access to and from their properties.

3. The commercial boat yard, to the south of the revetment, shall not have its operational activities hindered by the *works*.

4. Sections of the work along the foreshore are at risk of being cut off by the incoming tide and are exposed to wave action. The contractor will be required to plan works around tide times and to monitor weather forecasts/conditions to make sure that the risk to staff and machinery is kept to a minimum managed in accordance with the latest H&S legislation.

WI 208 Existing services

1. All known services information is included within the Site Information. Prior to carrying out the works the *Contractor* is to independently verify the location of all known services, and actively search for any previously unidentified services prior to carrying out any intrusive ground works.

2. The *Contractor* shall undertake all discussions with Utility Companies to gain the required permissions for the works on or around services.

WI 209 Ground conditions

1. A ground investigation was undertaken on the 17th May 2017 to determine the level of the periglacial clay deposits, colloquial known as Ram, which underlie the beach material. See Site Information: UA009765-ARC-XX-XX-RP-CE-5000, Appendix C, for trial pits logs.

WI 210 Permanent Access

1. A footpath is illustrated on the 1:25,000 O.S. map behind the existing engineered dune. Where the working area blocks the route, the path shall be diverted along the boat yard boundary fence. The path shall have a minimum width of 1.5m.

WI 211 Storage of fuel and chemicals

1. No additional constraints to those identified in the MTR

WI 212 Pollution, ecological and environmental impacts

1. Debris burning shall not be permitted under any circumstances.

2. Works shall follow best practice guidance for pollution control. All materials, including machinery, shall be securely stored in the site compound when not in use. Staff shall be appropriately trained on how to use spill kits correctly. Small plant (including generators) shall be placed within drip-trays or plant nappies.

WI 213 Archaeological requirements

1. There are no know areas of interest which interface with the works area and/or require further investigation.

WI 214 Confidentiality

1. The *Contractor* shall not disclose information regarding the works to third parties without the acceptance of the *Project Manager*.

2. All contact from third parties will be forwarded to the *Project Manager*.

3. The *Contractor* may publicise the services only with the *Employer's* written permission.

WI 215 Security and protection on the site

1. The *Contractor* is responsible for the security of the site and for vehicles and pedestrians entering and leaving the site.

2. Security measures shall include ensuring that the *Contractor's* personnel are easily identifiable.

WI 216 Protection of existing structures and services

1. The existing engineered dune defence shall be excavated at its northern most extent to accommodate the revetment roundhead. The excavation shall ensure the timber sleeper wall which forms the rear extent of the exiting engineered dune, remains supported and intact during the works, or if it is removed to aid construction, it is to be reinstalled to its original line, level and condition.

2. An existing sewer outfall for a septic tank is shown on the contract drawings. It is reported as not being live and shall be removed where it interfaces with the proposed works.

WI 217 Protection of the works

1. The *Contractor* should state in the Method Statement any measures they will employ to protect the works in the temporary state during periods of unsettled sea states. See Appendix B for details on how the revetment works should be protected during construction.

WI 218 Cleanliness of the roads

1. No additional constraints to those identified in the MTR.

WI 219 Traffic Management

1. The *Contractor* is responsible for traffic safety and management including obtaining all approvals, e.g. road closures and openings. Before any work in, or affecting the use of, any highway or road is commenced, the *Contractor's* proposed method of working, including any special traffic requirements, is agreed with and confirmed in writing to, the *Project Manager*, and all relevant authorities.

2. The *Contractor* shall produce a Traffic Management Plan to be submitted to the *Project Manager* prior to construction of the works.

3. The Traffic Management Plan is to include, but is not limited to, the following:

    - Access routes to be taken by heavy vehicles, noting any height or weight restrictions
    - Details for keeping roads clear of dust and mud
    - Timings for heavy load movements
    - Vehicular routing
    - Parking restrictions for construction vehicles on the public highway surrounding the site
    - Pedestrian walkways around the site
    - Storage areas
    - Timetable for removal of site compound equipment

4. The *Contractor* co-operates with the relevant authorities concerning works in, or access to, the highway. The *Contractor* informs the *Project Manager* of any requirements or arrangements made with the relevant authorities.

5. The *Contractor* shall be responsible for liaising with the public regarding road closures and regular movements on the highway.

WI 220 Condition survey

1. At least two weeks prior to taking possession of the Site, the *Contractor* shall undertake condition surveys in accordance with the *Employer's* Minimal Technical Requirements.

2. The *Contractor* shall make a note of any existing damage and bring this to the attention of the *Project Manager*.

3. The *Contractor* shall repeat the condition survey on completion of the works in accordance with the *Employers* Minimum Technical Requirements and provide a copy to the *Project Manager.*

4. Photographs, surveys and inventories must be date stamped, NRG referenced, and copies held by the *Contractor*. The *Contractor* shall provide these to the *Project Manager* and the *Supervisor*.

5. The *Contractor* shall undertake condition surveys with the *Supervisor*, and any others invited by the *Contractor*, *Project Manager* or *Supervisor*. The *Contractor*, *Project Manager* and *Supervisor* notify each other in advance if any others are invited.

6. The *Contractor* is to give at least one weeks' notice to the *Project Manager* and *Supervisor* prior to undertaking any condition survey.

7. All record photographs and videos shall comply with the requirements of the Minimum Technical Requirements.

WI 221 Consideration of Others

1. No additional constraints to those identified in the MTR.

WI 222 Control of site personnel

1. The *Contractor* shall ensure that all persons working on or visiting the Site hold a valid and current Construction Skills Certification Scheme (CSCS) card. A member of the site team shall escort persons without this card at all times.

2. The *Contractor* will maintain a visitors' book recording the date, the time in, the time out, evidence of a specific Health and Safety induction, CSCS number, and the name and company of the person visiting.

WI 223 Site cleanliness

1. No additional constraints to those identified in the MTR.

WI 224 Waste materials

1. Any construction related materials shall be disposed of away from site without any contamination of the waterways or surrounding land. Disposal must be in accordance with the Site Waste Management Plan (SWMP) and by a licensed waste disposal *contractor* with an audit trail. Refer to 1.14 EA MTR.

2. The *Contractor* determines volumes of waste to be disposed of offsite and applies for the appropriate licences

3. The SWMP shall be submitted to the Project Manager for acceptance before prior to works on site commencing.

WI 225 Deleterious and hazardous materials

1. No additional constraints to those identified in the MTR.

WI 226 Consents & Licencing

1. A Marine Management Organisation (MMO) Licence is required for the proposed works. Work is not to commence on site prior to the MMO licence being in place. See **WI 1002**.

WI 227 Excavating Material

1. Excavated material is to be placed in an area agreed with the *Project Manager.*

2. The *Contractor* is responsible for removing any excavated material from the site which cannot be redistributed within the working area.

3. The *Contractor* is responsible for all, permits, permissions and costs associated with removal and disposal of surplus material.

WI 228 Reinstatement

1. The works area, in particular the grassed compounded areas, adjacent to the boat yard shall be reinstated in their preconstruction condition.

2. The *Contractor* shall seed any bare soil patches within the works area behind the revetment using Mixture 4, CESWI 2.56, point 1.

WI 300 *Contractor's* design

WI 301 Design responsibility

1. The Contractor is not required to design any elements of the scheme.

WI 400 Completion

WI 401 Completion definition

1. The following are absolute requirement for Completion to be certified, without these items, the *Employer* is unable to use the works:

    - The whole of the *works* has been completed in accordance with the Works Information.
    - There are no Defects that prevent safe access and operation by the *Employer.*
    - There are no Defects that present a health and safety hazard to the public or landowners.
    - 1 paper copy and 1 electronic copy of the final Health and Safety File.
    - 1 hard copy of As Built drawings and one electronic version

WI 402 Access to information following Completion

1. The *Contractor* shall provide all information relevant to the works to the *Project Manager* following completion. The *Contractor* shall retain copies of all information for inspection by the *Project Manager* for the duration of the contract liability period.

2. The *Contractor* shall retain a copy of all design records, software code, supplier's details and other relevant information for a period of at least 12 years following Completion and shall make these available to the *Employer* on request.

WI 403 Final Clean

1. The *Contractor* shall leave the site in a clean, tidy condition and having removed all temporary structures, equipment, plant and materials.

WI 404 Security

1. All existing landowner security arrangements shall be reinstated upon completion unless agreed otherwise. The *Contractor* shall ensure that landowner security is maintained at a similar level to that which currently exists on the site during the implementation of the works.

WI 405 Pre-Completion arrangements

1. Prior to any works being offered for takeover or Completion the *Contractor* shall arrange a joint inspection with the *Supervisor*, *Project Manager* and the *Employer.*

2. The initial inspection shall take place a minimum of three weeks in advance of the planned Completion.

WI 500 Programme

WI 501 Programme Requirements

1. The *Contractor* shall programme the revetment construction works to make best use of tidal working periods so as to minimise the exposure of underlayers to unfavourable sea conditions.

WI 502 Revised Programmes

1. Submission of revised programmes shall be accompanied with a written explanation of the changes.

WI 600 Quality Assurance

WI 601 Samples

1. Concrete cube samples shall be required to verify the strength of the concrete. The procedure shall be in line with the minimum technical standards (4.9).

WI 602 Quality Statement

1. The *Contractor* shall submit his quality statement for the works to the *Project Manager* within 4 weeks of the starting date.

WI 603 Quality management system

1. The *Contractor's* quality management system shall comply with the requirements of ISO 9001 and ISO 14001.

WI 700 Tests and inspections

1. At the commencement of the armour stone placement, the *Contractor* shall be required by the *Supervisor* to construct a test section of the structure which shall be used to demonstrate the quality of placing of armour stone for all layers, for approval by the *Supervisor.* See Appendix B, section 4.3 for further details.

2. No revetment layer shall be covered by a subsequent layer until the profile of the former layer has been approved by the *Supervisor*. See Appendix B, section 4.5 for further details.

3. Upon completion of the works the *Contractor* will undertake a level survey of the revetment for acceptance by the *Supervisor*. See Appendix B, section 4.8 for further details.

4. The *Contractor* shall keep daily photographic records of all works carries out. All structures, pipework, formation levels, construction materials etc buried shall be photographed prior and during burying operations.

WI 800 Management of the *works*

WI 801 Project team - Others

1. Refer to Contract Data for details.

WI 802 Communications

1. No additional requirements to those stated in the MTR

WI 900 Working with the *Employer* and Others

WI 901 Sharing the Working Areas with the *Employer* and Others

1. The *Contractor* is required to co-operate with Others in sharing the working areas they need in connection with the works.

2. Statutory bodies (the local planning authority, MMO, Natural England etc.) may arrive at site unannounced to assess whether the *works* are being implemented within the conditions of the granted consent. The *Contractor* shall co-operate with any reasonable requests and share the working area.

WI 1000 Services and other things to be provided

WI 1001 Services and other things for the use of the *Employer, Project Manager* or *Others*

1. The details of services and other things for the use of the *Employer*, *Project Manager* or Others to be provided by the *Contractor* are listed in the Environment Agency Minimum Technical Requirements (1.2)

2. The *Contractor* is responsible for obtaining all temporary service connections required for the duration of the works, including power, water, gas and telecommunications. Where no fixed connection is to be used, the *Contractor* is responsible for making alternative arrangements. In the case of sewerage for instance, the *Contractor* is responsible for safely disposing of any waste generated if no connection to a public sewer is available.

WI 1002 Services and other things to be provided by the *Employer*

1. The *Employer* is responsible for the following: -

   - Obtaining permission from the landowner to use the site for the purposes of the *works.* The *Contractor* should not approach any landowner directly unless authorised to do so by the *Employer*.
   - Obtaining Marine Management Organisation consent for the *works.*
   - Giving the *Contractor* access to the site. The *Contractor* must give 5 working days' notice to the *Employer* to gain access to the site during the defects correction period.

WI 1100 Health and safety

WI 1101 Health and safety requirements

1. The *Contractor* shall comply with all applicable legislation for the health, safety and welfare of his people or any other person in or near the Site of the *works*.

2. The *Contractor* copies to the *Project Manager* into all correspondence with the *Principal Designer*.

3. The *Contractor* shall fulfil the role of Principal Contractor under the Construction Design and Management Regulations 2015 for the duration of the works.

Toolbox talks

1. The *Contractor* provides regular toolbox talks to site personnel to ensure that health and safety issues, the requirements of the contract and the design and the contents of method statements are communicated throughout the site team.

Incident reporting

1. The *Contractor* shall provide a written report within 21 days of the incident, unless otherwise agreed with the *Project Manager*.

First Aid

1. The *Contractor* shall provide first aid facilities; Materials and personnel trained in first aid, for the benefit of his own people, those of his Subcontractors and the site staff of the Project Manager, Supervisor and Employer.

Provision of Life Saving Equipment

1. The majority of the works will be undertaken immediately adjacent to water. Lifesaving equipment will be provided to the satisfaction of the *Project Manager*.

WI 1102 Method statements

1. The *Contractor* shall submit Method Statements to the *Project Manager* at least two weeks in advance of carrying out items of work including proposed method of forming the revetment profiles indicated on the drawings.

2. The Contractor shall not commence any permanent works until the *Project Manager* has approved in writing the *Contractor's* working methods for forming the works.

3. The *Contractor* provides the works in accordance with the accepted method statement.

WI 1103 Legal requirements

1. The Principal Contractor duties under the CDM Regulations 2015 shall be undertaken by the *Contractor*.

2. The Principal Designer duties under the CDM Regulations 2015 shall be undertaken by the *Employer's* consultant- Arcadis.

3. The Client duties under the CDM Regulations 2015 shall be undertaken by the *Employer*.

WI 1104 Inspections

1. The *Contractor* shall provide a competent health and safety officer whilst *works* are being carried out on the Site.

2. The *Contractor's* health and safety officer carries out weekly audits of the Site and submits copies of audit reports and proposed remedial actions to the *Supervisor* prior to the end of the following week.

3. The *Employer* may carry out site audits. The *Contractor* assists in these audits and complies with any recommendations made during such audits.

WI 1200 Subcontracting

1. The *Contractor* is responsible for all the work.

WI 1300 Title

1. Not required.

WI 1400 Acceptance or procurement produce (Option C, D, E and F)

1. Not required.

WI 1500 Accounts and records (Options C, D, E & F)

1. Not required.

WI 1600 Parent company guarantee (Option X4)

1. Not required.

WI 1700 Performance Bond (Option X13)

1. Not required.

WI 1800 Advance payment bond (Option X14)

1. Not required.

WI 1900 Low Performance damages (Option X17)

1. Not required.

WI 2000 *Employer's* work specifications and drawings.

WI 2100 *Employer's* work specification

1. The *Employer's* minimum technical requirements are the Civil Engineering Specification for the Water Industry (CESWI), 7th Edition, supplemented by the Environment Agency's Minimum Technical Requirements (EA MTR). See Appendix A.

2. The Specification for Highway Works (SHW) standards are applicable where it is referenced in the Works Information.

3. The General Specification for the rock revetment is The Rock Manual – The Use of Rock in Hydraulic Engineering 2nd Edition (CIRIA C683) 2007. This is supplemented by additional clauses contained within the Particular Rock Revetment Specification. See Appendix B.

4. In so far as any information contained within the Works Information (including the Works Specification) may conflict or be inconsistent with any provision of CESWI 7 and/or the EA MTR then the particular information contained within the Works Information shall always prevail.

5. CEWSI & EA MTR clauses should be read as those clauses which are applicable to works apply and those that are not relevant should be ignored. E.g. Clause **2.102**: ***Precast Concrete Box Culverts*** is not applicable as it is not shown on the drawings and not mentioned in the Works Information. Therefore, text relating to those clauses in CEWSI & EA MTR should be ignored. However, if the design is modified during construction to include works for such an item, the clause should be adhered to.

6. The following reports and specifications form a part of the Works Information:

   - Appendix A - Employer's Minimum Technical Requirements- (EA MTR)
   - Appendix B - Rock Revetment Specification

   N.B. It is assumed the *Contractor* will have access to CESWI 7 and other industry standard references made within the Works Information and hence will not be distributed as part of the Contract Documents.

WI 2200 Drawings

1. The following drawings form a part of the Works Information:

   - UA008878-ARC-XX-XX-DR-CE-0200-Porthloo Site Plan
   - UA008878-ARC-XX-XX-DR-CE-0220-Porthloo Revetment Plan
   - UA008878-ARC-XX-XX-DR-CE-0221-Porthloo Sections Sheet 1
   - UA008878-ARC-XX-XX-DR-CE-0222-Porthloo Sections Sheet 2
   - UA008878-ARC-XX-XX-DR-CE-0230-Porthloo General Arrangement
   - UA008878-ARC-XX-XX-DR-CE-0231-Porthloo Reinforcement Details

APPENDIX A

EMPLOYER'S MINIMUM TECHNICAL REQUIREMENTS-EA MTR

APPENDIX B

ROCK REVETMENT SPECIFICATION