

C A R L O W  
C O U N T Y C O U N C I L

COMHAIRLE CHONTAE CHEATHARLOCHA



**Carlow County Council**

**Taking in charge of Housing Estates  
Policy Document**

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## 1.0 INTRODUCTION

This document outlines Carlow County Council's policy in relation to taking in charge of private housing developments and will be reviewed, amended and updated at least annually by the Planning Section. This document has been updated with regard to Circular Letter PD 1/08. The Department of Environment, Heritage and Local Government is to issue new guidelines relating to public lighting standards and road design standards shortly and these will be incorporated into this document in due course.

The procedure for the taking in charge of residential development operates pursuant to Section 180 of the Planning and Development Act 2000.

Planning applications for residential development should delineate the area that would potentially fall to be taken in charge on the site layout map. Generally core services will be taken in charge. Regard must be given at the pre-planning stage to the location of services, for example sewers and water mains should not be located under landscaping or allocated parking area that will not be taken in charge.

Certain private housing developments (usually multi-unit structures included 4 units of more, such as apartments or duplexes and also holiday homes) will have a condition in the planning permission that properly constituted management company be established

For most private housing developments, the following elements of a development will be considered by the Council for taking in charge, subject to the conditions and requirements indicated below:

- Public lighting
- Roads and footpaths
- Unallocated surface parking areas
- Water mains and potable water treatment plants and associated buffer zones
- Surface Water Sewers
- Foul Sewers
- Wastewater treatment plants and any associated buffer zones
- Open Spaces, where available for public use
- Playgrounds, where these are required by condition of a planning permission and are facilities for public use
- Gas Pipelines
- Fire Services including fire hydrants
- Service ducts
- Site Boundaries, which are abutted by, open spaces, public roads or public footpaths, either existing or proposed, on both sides. (Boundary walls between private property and public open spaces/roads/footpaths remain the responsibility of the property owner.)

Standards higher or equivalent to those set out in this policy will be considered where acceptable.

Developers shall note that liability for the above elements of a development shall remain with the developer until such time as Carlow County Council takes them in charge

## **2.0 GENERAL CONDITIONS**

- The development is an authorised development.
- All development contributions have been paid in full.
- All connection fees have been paid in full.
- The Developer may apply to have the development taken in charge by submission to Carlow County Council of an application form - “Application to have Development taken in charge by Carlow County Council”, as set out in Appendix F of this document. The application form must be certified by a suitably qualified Engineer, who holds professional indemnity insurance for the purpose of signing such forms. Evidence of such insurance shall be furnished to the Council. The contents of the application form shall be deemed to be for the benefit of Carlow County Council.
- All major elements of a scheme such as roads, services, retaining structures, boundary walls etc. to be certified, that they meet the requirements of the current National Design Standards, by a suitably qualified Engineer covered by Professional Indemnity Insurance. A minimum level of cover of 6m Euro (six million euro) is required and for such cover to be kept in place for a period of 3 (three) years after Certification.
- The development must be constructed in accordance with the planning permission granted.
- Any bond or security lodged with the Planning Authority will not be released until the satisfactory completion of the works and the taking-in-charge of development by the Council.
- The roads, footpaths, sewers, drains and water mains shall be constructed in accordance with the “Recommendations for Site Development Works for Housing Areas” - Department of the Environment and Local Government (1998)\* and “Specification for Road Works” - National Roads Authority\*\*, save where the conditions hereunder otherwise require. The publication of new national standards in relation to roads and public lighting is expected and once published development shall comply with these standards.
- The Developer shall furnish evidence to the Council that all necessary way leaves for services are reserved forever in the transfer documentation to house purchasers.
- The Developer shall note that a minimum width of 10 metres shall be required in respect of any way leave for sewers or water mains. This width may be reduced in certain circumstances only after consultation with the Council and agreed in writing.
- Three copies of “as constructed” drawings (scale 1:500) of the development shall

be submitted to the Council.

\* Available from Government Publications Sale Office, Sun Alliance House, Molesworth Street, Dublin 2 - Tel. 01 - 6793515

\*\* Available from National Roads Authority, St. Martin's House, Waterloo Road, Dublin 4 - Tel. 01 6602511

The drawings shall indicate the following information:

- (i) The estate boundary depicted in red, open spaces coloured green, all roads, footpaths and public lights, road names and house numbers. For large housing estates where several 1/500 Drawings will be required to cover the estate, then minimum overlap 20m should be allowed to assist continuity. In these cases 1/1000 Maps outlining the estate to be taken in charge will be acceptable.
- (ii) For mixed developments where private houses are located in proximity to Apartments, Town Houses, Duplex, Shopping facilities, Crèches, and the like it will be necessary to clearly delineate on the 1/500 drawings the property boundaries of such facilities or the area over which the Management Company will exercise control for maintenance and repair in the future.
- (i) All services including water mains, valves, hydrants, sewers, road gullies, Telecommunication ducts/poles, ESB ducts/poles, cablelink (NTL) ducts, gas mains and all manholes. The invert and cover levels of all manholes shall be indicated relative to Malin ordnance datum. Drawings shall indicate the bench mark and value used. The gradients of all sewer sections shall be indicated on the drawings as well as distances between manholes and diameters of all pipelines.
- (ii) All drawings shall be properly titled, numbered and dated. All amendments to have revisions noted and dated.  
Title blocks shall comply with ISO/IEC Guide 7 1994 or BS 8888.  
All drawings shall be to a recognised Civil Engineering scale.

Under current Health and Safety legislation, on completion of a development, a safety file containing information relevant to the development works must be passed on to the local authority if it is intended that the development is to be taken in charge. If it is intended that the development is to be maintained by a private management company, the safety file must be passed on to the management company.

The safety file for a development is a record of information for the end user that focuses on safety and health. The information it contains will alert those who are responsible for the structure and services in it of the significant safety and health risks that will need to be addressed during subsequent maintenance repair of other construction work.

Relevant information, which could be included in the safety file, may include:

- Construction drawings, specifications etc used and produced throughout the construction process; general design criteria;
- Details of equipment and maintenance facilities within the development;
- Maintenance procedures and requirements for the development;

- Manuals, and where appropriate certificates, produced by specialist contractors and suppliers which outline operating and maintenance procedures and schedules for plant and equipment installed as part of the development, typically lights, electrical and mechanical installations, gas and heating installations and window cleaning; and
  - details of location and nature of utilities and services, including emergency and fire-fighting systems
- Subsequent to an application form being lodged with the Council for taking in charge of an estate, the Council will carry out an inspection of the estate.

### **3.0 COMPLIANCE**

Inspections should be joint inspections between the Developer's Representative and the County Council Inspector.

Where the development is found on first two inspections to be incomplete then any subsequent inspection will be carried out at a fee of €50 per house or a minimum of €2000 until the final inspection where taking in charge can be recommended. Where the estate is found to be substantially (in the opinion of the Council inspector) satisfactory in all respects on first inspection, there will be no re-inspection fee.

Any items found to be incomplete or not up to the required standard, will be corrected by the Developer at his own expense, prior to the next inspection.

If issues of non-compliance with the plans, particulars or conditions of a planning permission arise or the standards contained herein, the Council will consider initiating enforcement proceedings so any shortcomings does not fall to be funded by the planning authority.

Where a developer fails to satisfactorily complete a residential development or a phase thereof, and the Council considers the completion of the taking-in-charge procedure urgently necessary, the Council has discretion, (subject to the attachment of an appropriate planning condition) to take the development in charge and to complete the necessary services, financed by the bond or security provided by the developer and without any cost to itself.

The Council will exercise its discretion to refuse planning permission to developers who have substantially failed to comply with a previous planning permission pursuant to amended section 35 of the Planning and Development Act 2000

**Taking-in-charge priorities and timeframe**

Timeframe for the Taking in Charge process shall be as follows:

- Carlow County Council to acknowledge receipt of formal request from a developer to take in charge a Development
- Carlow County Council to arrange inspection and notify Developer of outstanding issues within 2 months.

- Developer to resolve outstanding issues within 1 month.
- Carlow County Council to arrange re-inspection within 1 month.
- On basis that all issues are resolved Carlow County Council to initiate Statutory procedure for Taking in Charge.

In large-scale developments the Council will take in charge individual phases provided they are in isolation of the remainder of the development, have different and unique access points onto the public road and there is a clear demarcation between the phases.

In relation to older estates that have been satisfactorily completed with regard to the standards contained herein and the plans, particulars and conditions of the related planning permission, the Council will take these estates in charge as soon as possible.

In relation to older estates, where planning permission has been expired, where the calling in of a bond is not possible and/or enforcement options have been exhausted, the Council will rank these estates towards the top of its schedule of priorities of estates to be taken in charge.

Where the majority of residents (the majority of owners/occupiers who are qualified electors pursuant to section 180(1) of the Planning and Development Act) request that a residential estate be taken in charge, this request will be considered promptly.

#### **4.0 VESTING MAPS**

- The Developer shall transfer or convey to Carlow County Council, at his expense, all of the land contained in the planning permission affected by this policy document.
- The land is to be indicated on 1/2500 or 1/000 original Ordinance Survey Maps or part thereof OR an A3 or A4 Certified and Stamped copy of the OS Map, covering the entire estate and with the property boundaries clearly highlighted in red.
- The estate layout should be indicated and the open spaces, hard play areas and communal area such as arbours, gardens or woods clearly delineated and coloured green.
- The OS Map Ref No. the Scale, the North point, the estate name and location to be clearly shown.
- A schedule is to be written on the OS map giving the area in hectares of each open space, hard play area etc and stowing a Total Area signed by a surveyor or engineer with indemnity insurances. Relevant folio reference information should also be provided.
- To this map should be appended the standard Vesting Document transferring ownership of the above areas to Carlow County Council for the sum of €1 with the necessary signatures, witnesses etc.
- For a wayleave proposed for services outside of the site, and not in a public road or estate already taken in charge, then a wayleave map as above will be required, together with the standard wayleave document which grants right of access to

- Carlow County Council by men/machines for the purposes of maintenance, repair, and improvement to the relevant service.
- The minimum wayleave requirement is 10m in width with the service in the middle.
  - However, depending on the size and type of service, a greater width may be necessary in some circumstances. This should be checked with the Council prior to preparation of any map or documentation.
  - In the rare instance where the Council permits one of its existing mains / sewers in a site to be diverted to facilitate a new development this diversion will be carried out under the supervision of Sanitary Services, Inspectors, and a new wayleave should be provided concurrently with the diversion works to the relevant Water Services Section Standards.

## 5.0 PUBLIC LIGHTING

- The public lights shall be in accordance with the requirements set out in Appendix A.
- The Developer shall be responsible for maintenance of the public lighting system and all power charges, until such time as the Council has taken the development in charge or at the discretion of the Local Authority.
- Lighting shall be operating and certified by ESB Contracts Ltd. or other suitably qualified persons as complying with the relevant standards.
- Each standard shall be clearly, individually and uniquely numbered.
- The Meter Point Reference Number (MPRN) and the loads associated with each micro pillar shall be submitted.
- The publication of new national public lighting standards is anticipated; once published developments should comply with these standards

## 6.0 ROADS AND FOOTPATHS

The application for Taking in Charge shall be accompanied by:

- A condition survey of the roads and footpaths together with a list of defects having been identified and certification that the list of all remedial works agreed with the County Council have been carried out.
- The results of Falling Weight Deflectometer (FWD) tests to determine the strength of sub-grade and permanent layers for roads showing major signs of deterioration together with certification that the list of all remedial works agreed with the County Council have been carried out.
- The roads and footpaths shall be taken in charge in conjunction with water mains, sewers and open spaces. The roads and footpaths shall be constructed in accordance with the requirements set out in **Appendix B**.
- Elements under this section include water mains, surface water sewers, foul water sewers and drains.
- These elements shall be taken in charge in conjunction with roads/footpaths and open spaces.
- The water mains and collection systems shall comply with the technical

requirements included in the Water Services Guidelines set out in Appendix C.

## **7.0 WATER SERVICES**

### **CCTV SURVEY/MANHOLE SURVEY**

The Local Sanitary Authority will only “take in charge” drainage infrastructure which has been constructed to the required standard. All defects identified during post construction surveys will have to be rectified at the Developers expense before the Local Sanitary Authority will take the infrastructure “in charge”.

On completion of construction works, all sewers shall be thoroughly cleansed, ensuring that no construction material reaches the public sewerage system. They shall be maintained in a clean and serviceable condition, prior to them being taken in charge.

A condition survey shall be carried out, at the Developer’s expense, on all main pipelines to the requirement of the Local Sanitary Authority. This is to include a CCTV survey and a written report as specified in the latest edition of the WRC (Water Research Council) Sewerage Rehabilitation Manual.

The report shall include a summary of any defects in the systems. Any defects in the systems shall be corrected by the Developer at his own expense, resurveyed and the new survey submitted to the Council, prior to taking in charge. High-resolution photographs and quality DVD recordings shall supplement the printed report.

The CCTV Survey shall be carried out using a camera, which is capable of measuring distances from one manhole to another.

All drainage works are to be constructed to the requirements of this Code of Practice and any additional requirements of the Local Sanitary Authority.

An as-constructed drainage and water service layout plan shall be submitted, both hard copy and soft copy, prepared to MapDrain format (drainage), Autocad format (water services) are to be submitted by the Developer to the Local Sanitary Authority for written approval. The as constructed package must include the following;

- For drainage each manhole’s Easting and Northing co-ordinates, cover and invert level, upstream and downstream pipe diameter, material and direction of flow.
- For water services location of each water main, valves, hydrants, meters, etc.
- The layout should be accurately positioned (+/- 300mm relative to local detail) on the latest published version of the ordnance survey 1:1000 series.
- All dimensions shall be metric.

- All levels must be related to Ordnance Survey Datum, Malin Head, to an accuracy of +/- 25mm and stating which benchmark was used.
- A list of the National Grid Co-ordinates (accurate to +/- 300mm) for the manholes should be supplied.

### **COLLECTION SYSTEMS/PRIVATE TREATMENT PLANTS**

Collection systems, which shall be connected to an existing local authority system, shall be taken in charge, subject to them complying with the requirements of this document.

Collection systems shall include, but is not limited to, all attenuation tanks, pump sumps, pipelines etc. the design of which shall be certified by a qualified engineer with appropriate professional indemnity insurance in place. Note all pumping stations shall be certified to comply with the requirements of Carlow Local Authorities.

In the case of foul sewage collection systems, which shall in future be connected to a public system, the developer shall be required to enter into a satisfactory arrangement for the maintenance and operation of the system in the interim. No new connections may be made to the system without the express written approval of Carlow County Council.

Foul sewage collection systems, which are not part of a present or future local authority system, shall not be taken in charge by the local authority, e.g. temporary connections to a temporary treatment plant.

Private treatment plants serving more than one house may, at the discretion of the Local Authority and upon agreement with the Council, be taken in charge. In any case, Developers shall comply with the technical requirements of **Appendix C** to minimise the risk of a public health hazard.

Where a private treatment plant is proposed, it will be a requirement of the planning permission that a properly constituted management company be established for the purpose of maintaining the foul sewers, treatment plant and any ancillary plant/equipment.

The said foul sewers/treatment plant etc. shall be conveyed to the Management Company. Any security lodged with the planning authority will not be released until the satisfactory completion of the foul sewers/treatment plant etc. and conveyance of the latter to the Management Company has been completed.

It will be a further requirement of the planning authority that the Management Company furnish evidence of the existence of a contract for the operation and maintenance of the treatment plant with a suitably qualified contractor together with a bond or other financial security to ensure the continuance in place of such operating and maintenance contract for a period of not less than 20 years.

The treatment plant shall be operated in accordance with the conditions of the discharge license and conveyed to the management company before the roads, footpaths, water mains and open spaces shall be considered by the Council for taking in charge.

### **SERVICE CONNECTIONS**

All water mains, valves, stopcocks and fire hydrants are to be located in public footpath or roadway, insofar as possible. Stopcocks and Water Service Control Units shall not be located in private driveways. A separate stopcock or shut-off valve shall be fitted within each house.

The water service connection for each house shall be taken in charge as far as the stopcock i.e. including the stopcock. The householder will be responsible for the service from the stopcock to, and including, the internal building system.

Developers shall note that sewer service connections will not be taken in charge.

## **8.0 OPEN SPACES**

- The development and landscaping of open spaces shall be carried out in accordance with the planning permission granted and the attached specification. **(Appendix D)** Maintenance of open space areas (including grass cutting) shall be the responsibility of the developer until the Taking in Charge process has been completed.

## **9.0 GAS PIPELINES**

- Location of all gas pipelines to be shown on as constructed drawings.

## **10.0 SERVICE DUCTS**

- All telecommunication and power ducts to be shown on as constructed drawings. Each cable shall be identified with the service it provides and body responsible for maintenance of the same.
- All services ducts (including water services and gas pipelines) shall be properly spaced in trenches. The use of pipe spacers is preferred.

## **11.0 SITE BOUNDARIES**

- Site boundaries abutting open spaces and public roads to be shown on as constructed drawings.

## **12.0 MATERIALS TESTING**

- Materials for use in those sections of the works that are to be taken in charge shall meet the specification laid down in the “Specification for Road Works” - National Roads Authority\* and shall be to the approval of Carlow County Council. The testing requirements shall be as shown in **Appendix E**.

*Available from National Roads Authority, St. Martin’s House, Waterloo Road, Dublin 4 - Tel. 01 6602511*

## **13.0 MONITORING & POLICY REVIEW PROCEDURES**

Technical aspects of this policy will be reviewed, amended and updated at least annually by the Planning Section.

A status report will be prepared and presented to the Strategic Policy Committee following any review.

## **APPENDIX A: Public Lighting – Technical Requirements**

Public lighting installations shall be in accordance with the Specifications for Public Lighting Installations for Residential Developments. The minimum standard of illuminance that should be considered acceptable, can be provided by the installation of:

- 55 w SOX side-entry lantern at 6m mounting height and 0.7m outreach
- 70 w SON side-entry lantern at 6m mounting height and 0.7m outreach
- Other lanterns may not be used without prior approval of Carlow County Council

A staggered arrangement of lanterns is to be preferred for the lighting of roads with a footway on either side but a single side arrangement may be used provided that the lighting criteria are met.

The Developer shall furnish to the Council a copy of the public lighting design, as prepared by E.S.B. (Public Lighting Design Section) or other approved Lighting Design Engineers.

Typical specification for lighting columns and brackets for minor road lighting as applicable at the time of publishing. (Alternative specifications may be acceptable subject to the prior approval of Carlow County Council)

### **1.0 COLUMNS**

1.1 Lighting columns shall be of octagonal steel construction with a minimum wall thickness of 3mm and shall comply with the requirements of BS5649 or EN40. Brackets may be of tubular construction with a minimum wall thickness of 3mm. Columns and brackets should be protected against corrosion by hot-dip galvanising, in accordance with IS EN ISO 1461.

1.2 Mill test certificates may be required for the column and bracket steel sections.

1.3 Octagonal columns should be 7m long (6m above ground) of folded steel, gradually tapered at a constant rate from the base and terminating with a dimension of 68mm across flats at the top.

### **2.0 BRACKETS**

2.1 The bracket shall be of the single arm type in 33.7mm tube with a 3.2mm wall thickness and made from steel which is equal to or better than BS EN 10025 (1993) S 275 JO. It should be constructed to permit clear movement of cable through bracket and column. The bracket arms shall be manufactured with the bracket arms inclined 5 degrees above the horizontal

2.2 The column and bracket shall carry a permanent identification mark, indicating the manufacturer and year of manufacture. Both identification marks shall be clearly visible following galvanising.

### **3.0 CONSTRUCTION**

3.1 The fixed column shall consist of two parts, the shaft and the bracket. These shall be

so fabricated that when fitted together there shall be no rotation of the bracket on its spigot.

3.2 The shaft shall be of 3mm folded high tensile steel and gradually tapered from the base to the bracket spigot.

#### **4.0 SHAFT (FIXED COLUMN)**

4.1 The base shall be fitted with a cable entry opening of 180 x 60mm, with the top of the opening 700mm from the base end. A base compartment shall be provided in the shaft with a welded-in frame for a recessed fitting door. The internal diameter of the compartment shall be not less than 120mm and the bottom of the compartment shall be 1300mm above ground level. The door shall be vandal resistant and weatherproof to IP 33 with two recessed locking mechanisms requiring a female triangular key of 10mm side. The dimensions of the door shall be 385mm x 90mm (frame size 40mm x 104mm) and all doors must be interchangeable.

4.2 An earthing connection shall be provided within the base compartment and the fastening screw for this connection should be of stainless steel.

#### **5.0 FINISH**

5.1 After fabrication, the shaft and bracket shall be hot dip galvanised both inside and outside.

5.2 Where retaining bolts or grub screws are used to secure the bracket to the shaft these shall be made of stainless steel and they shall not be galvanised.

5.3 The root of the shaft to a height of 50mm above planting depth to be dressed both inside and outside with a double protective thick bitumen coating.

5.4 All columns and brackets shall carry a permanent identification mark indicating the manufacturer. The column identification mark shall be permanent and clearly visible within the base compartment. This may be achieved by a permanent label fixed inside the base compartment, but not on the door. Alternatively, the marking may be formed in the material of the column immediately above or below the door provided the external appearance remains acceptable to ESB. The bracket identification shall be hard stamped onto the lantern spigot, and must be legible after galvanising or any other surface coating.

#### **6.0 LOADING**

6.1 The column and bracket shall be designed to carry a side-entry lantern of weight 6.000kg and a wind area of 0.10msq. The centre of the side-entry lantern shall be considered to be 900mm from the shaft axis. A location factor of K=3 shall be applied.

#### **7.0 LANTERNS**

7.1 Lanterns shall comply with the requirements of IS EN 60598-2-3; 1994, IS EN 13201; 2003 and BS 5489; 2003.

7.2 The body of the lantern shall be constructed from injection moulded or die-cast aluminium alloy, GRP, or other suitable corrosion-resistant material. It shall be suitable for side-entry mounting on a straight 0.7m bracket with a spigot size of 34mm x 100mm long.

7.3 The lantern shall be fitted with a NEMA 3-pin twist lock photocell socket and a

porcelain BC type holder for the lamp type.

7.4 The lantern shall be fitted with integral control gear equipment. The body of the lantern shall be divided into two separate compartments, one housing the control gear, and the other housing the optical system. The control gear may be located over the lamp but a metal reflector shall be positioned between the lamp and the gear.

7.5 A light transmitting plastic bowl shall protect the optical compartment of the lantern. The bowl shall be of an anti-vandal, ultraviolet stabilised, polycarbonate material, which as a minimum guaranteed life of five years against mechanical or optical deterioration in Irish climatic conditions. The bowl shall be secured by clips and may also be hinged.

7.6 All grub screws, the earthing screw, bowl clips, springs, and hinges shall be fabricated from a corrosion resistant material which shall have resistance to deterioration for a minimum of fifteen years, e.g., GRP or stainless steel.

7.7 The lantern shall be protected against the ingress of dust and water and shall have an IP65 rating as a minimum for the optical compartment. All gaskets shall not deteriorate in service over the normal life of the lantern.

7.8 All internal wiring shall be of the heat resistant type. Those parts of the internal wiring which come near or in contact with the ballast shall be protected within a heat resistant sleeve.

7.9 A fixed and fused terminal block with clearly identified phase, neutral, and earth connections shall be provided within the control gear compartment.

Provision should be made to clamp all incoming cables securely.

7.10 The light distribution may be controlled by a system of internal reflecting surfaces or by a refracting prismatic bowl or a combination of both systems. The bowl, however, should have a smooth exterior surface. Reflecting surfaces, where used, shall be of high purity anodised aluminium and shall not deteriorate in quality for a minimum of fifteen years.

## ***8.0 CONTROL GEAR EQUIPMENT***

8.1 The control gear shall conform to the required standards and be suitable for use on 230V nominal voltage (-10%/+6%) on a 50cycle AC circuit.

8.2 The gear components shall be of the magnetic type and consist of a step-up transformer, a wire-wound ballast, an ignitor, and a capacitor. The ballast shall be rated at 240V and fed through a 230V/240V transformer. The capacitor shall be rated so as to achieve a corrected power factor of not less than 0.9 in the voltage range specified.

## ***9.0 FITTING OUT OF COLUMN***

9.1 A detachable hardwood baseboard, measuring 400x80x20mm shall be fitted in the base compartment of the column. The clearance between the baseboard and the inside face of the door, when secured, shall be not less than 100mm.

9.2 Each lantern shall be individually protected with a suitable fuse in the column base.

9.3 Neutral blocks, or looping-in blocks, shall be of an approved grooved bore 63A type, fully insulated and solidly mounted on the baseboard.

9.4 Columns shall be wired with a minimum 2.5mm<sup>2</sup> PVC/PVC stranded copper cable.

## ***10.0 CONTROL***

10.1 Switching of a Public Lighting system shall be by approved solid state photoelectric

cell. Each lantern may be individually controlled or groups of lanterns may be controlled by a single cell with the aid of contactors. A surface mounted switch, tested to BS3676, shall be provided in the base of the column, where a cell is located, to facilitate daytime testing by short-circuiting the photoelectric cell.

### ***11.0 PUBLIC LIGHTING MICRO PILLAR***

11.1 All columns shall be supplied from a Public Lighting Micro Pillar, located a minimum of 2 metres from the ESB section pillar. Not more than six columns may be supplied from any one circuit and not more than four circuits may be taken from any one micro pillar.

11.2 The pillar shall consist of a rectangular box of overall dimensions 600mm (H) x 150mm (D) x 250mm (W), with front and rear bottom extension plates, 300mm long, for anchoring purposes. The pillar shall be vented and fitted with a lift-out door, 445x142mm, fixed with two triangular headed locking screws onto a suitably tapped fixing plate, with a weather strip all around. The shell, door and extension plates shall be 3mm thick mild steel and the entire unit shall be hot dipped galvanised to IS EN1461. Ground level shall be clearly marked on the unit. The above dimensions are liable to change due to manufacturing.

11.3 An alternative pillar of similar design, particularly with additional features, may be offered for approval prior to installation.

11.4 The Meter Point Reference Number (MPRN) and the loads associated with each micro pillar shall be submitted to the Council at time of applying to take the street lighting in charge.

### ***12.0 FITTING OUT OF PUBLIC LIGHTING MICRO PILLAR***

12.1 A hardwood baseboard, measuring 440x140x20mm shall be fitted in each pillar. A main earthing terminal shall also be provided and all components shall be securely mounted on the baseboard.

12.2 All outgoing circuits shall be individually fused by means of a 20A HRC fuse unit, capable of accommodating cable sizes up to 25mm<sup>2</sup>. The fuse shall be rated 16kA minimum rupturing capacity and shall comply with BS1361. The terminals of the fuse unit shall be of the grooved bore type.

12.3 Where there is more than one outgoing circuit, a main fuse shall also be provided. The main fuse shall be rated 30A and shall otherwise be identical with individual circuit fuses.

12.4 A bituminous protective coating shall be applied all around the extension plates and up to a level on the shell extending 100mm above the ground level marking.

12.5 The installed pillar shall be embedded in concrete, in accordance with Class E, Clause 1502, of Specification for Roadworks, published by the Department of the Environment.

12.6 The front of all Public Lighting Micro Pillars shall display a permanent high voltage warning sign (black on a yellow face), 100mm wide by 120mm deep, securely fixed to the pillar door.

### ***13.0 CABLE AND DUCTING – MICRO PILLAR***

13.1 All cabling shall be laid underground in 100mm PVC-U ducting with a wall

thickness in the range 2.3-2.8mm. A minimum cover of 600mm to the ducting shall be provided in grass margins. A minimum cover of 750mm to the ducting shall be provided at road crossings. A spare duct shall be laid across all aprons.

13.2 Two core cables with a separate earth return path shall be used. Cables shall be either:

- 2x6mm<sup>2</sup> NYCY type to VDE specification 0271/5 or
- 3x6mm<sup>2</sup> PVC/SWA/PVC type to BS 6346:1989, with colours brown, blue and green-yellow.

13.3 Cable joints are not permitted. Cables shall be looped from column to column on each circuit. If faults develop on cables prior to commissioning, the section of cable involved shall be replaced.

13.4 A duct should be provided between the ESB section pillar and the Public Lighting Mini Pillar.

#### ***14.0 EARTHING – MICRO PILLAR***

14.1 All micro pillars shall be earthed, using an earth electrode and the supply neutralised. The electrode shall consist of a bare copper, or hot dipped galvanised steel rod/pipe of at least 16mm diameter, driven vertically into the soil for a length of at least 1,200mm.

14.2 If difficulties arise in driving the vertical rod, due to underground services, a horizontal earth electrode may be installed as follows: A straight length of at least 4.5m of either:

- 16mm diameter bare copper;
- 16mm diameter hot dipped galvanised steel rod;
- 25mm<sup>2</sup> cross-section bare copper;
- 25mm<sup>2</sup> cross-section hot dipped galvanised steel rod, buried in the soil to a depth of at least 500mm. The earthing lead shall exit the pillar through the services cable entry opening.

14.3 The connection at the earth electrode shall be accessible for inspection and shall be protected against corrosion by a suitable waterproof tape. The connection shall be enclosed in a galvanised steel box, with an inspection cover. After inspection, the connection shall be buried underground.

14.4 A main earth terminal shall be mounted on the pillar baseboard, with the following connections:

- 10mm<sup>2</sup> PVC cable from the earth terminal on the pillar, with a crimped lug connection to the pillar,
- 10mm<sup>2</sup> PVC cable from the earth electrode.
- 10mm<sup>2</sup> PVC cable from the neutral link.

14.5 A main earth terminal shall be mounted on the baseboard in each lighting column, with the following connections:

- 6mm<sup>2</sup> PVC cable from the earth terminal to the column, with a crimped lug connection to the column,
- 2.5mm<sup>2</sup> PVC cable from the lantern earth terminal.

14.6 The outer sheath of the incoming and/or outgoing service cable shall be connected to the main earth terminal, in the case of both the lighting column and the public lighting micro pillar baseboard.

14.7 If PVC/SWA/PVC cables are used, the outer sheath shall be terminated in an approved manner.

14.8 Earth continuity cables shall be coloured yellow/green, in accordance with ETCI wiring rules. In the case of NYCY cables, appropriate yellow/green sleeving shall be used.

### ***15.0 COLUMN INSTALLATION***

15.1 Where there is no grass verge, all columns shall be located to the back of the footway.

15.2 The excavation for lighting columns shall be a minimum of 500mm in diameter and 1.05 meters in depth.

15.3 Column erection shall be in three stages as follows:

- Place 50mm of blinding concrete in the bottom of excavation. Concrete shall be Class E, Clause 1502, Specification for Roadworks, or
- A socket of 300mm dia x 1500 deep can be used to accommodate the column. This socket must be placed vertically and must be bedded in concrete. A slot to allow cable entry should be cut into the socket: 450 to 500mm from ground level.
- Erect column vertically and centrally on the blinding and surround the column with Grade 15.20 concrete, to a level 150mm below the cable entry slot. Concrete shall be class 30/20, Clause 1501, Specification for Roadworks.
- The final one metre of incoming and outgoing supply cable, up to the cable entry slot, shall be protected by polyethylene piping, which shall extend 30mm into the column. The cable shall be kept level with the bottom of the entry slot, in order to avoid damage due to column settlement.

## Appendix B: Roads and Footpaths – Technical Requirements

### 1.0 ROADS

The minimum requirements of Carlow County Council for road construction in all housing estate developments is as set out below:

- Major access road (serving between 100 and 300 dwellings);
- Minor access road (less than 100 dwellings).

Road Surfacing	(i) Course 45mm thickness (compacted) dense (Two Courses) bitumen macadam wearing course (20mm nominal size aggregate) in accordance with Clause 910 “Specification for Roadworks” by the National Roads Authority (ii) Course 25mm thickness (compacted) dense bitumen macadam basecourse (10mm nominal size aggregate) in accordance with Clause 906 “Specification for Roadworks” by the National Roads Authority
Base Course	(i) Single course 55mm thickness of dense bituminous macadam (20mm nominal size aggregate) in accordance with Clause 906 “Specification for Roadworks” by the National Roads Authority (ii) Single course 40mm thickness of dense bituminous macadam (20mm nominal size aggregate) in accordance with Clause 906 “Specification for Roadworks” by the National Roads Authority
Road Base	Single course 80mm thickness (compacted) dense bitumen macadam basecourse (40mm nominal size aggregate) in accordance with Clause 903 “Specification for Roadworks” by the National Roads Authority.
Sub-base:	150mm thickness (compacted) granular material Type B in accordance with Clause 804 “Specification for Roadworks” by the National Roads Authority.
Capping Layer:	300mm minimum thickness (compacted) rock (hardcore) material. The material should have a maximum size of 100mm and the maximum allowable passing the 75 micron sieve should be 10%. The material should be well graded throughout the sizes. Exact thickness to be based on CBR results.

Developers shall note that a number of core samples shall, at Developer’s expense, be taken for testing purposes, prior to taking in charge (see Appendix E). The capping layer may be reduced in thickness or omitted, subject to the Developer submitting to the

Council prior to construction, CBR test results for the subgrade.

All road signs shall be supplied and erected by the Developer in accordance with the “Traffic Signs Manual” - Department of the Environment\* save where the Council otherwise require. \*

The Developer shall provide all road markings in accordance with the “Traffic Signs Manual” - Department of the Environment\* save where the Council otherwise require.

The height of the kerbs above the wearing coarse shall be 125mm unless otherwise specified.

Road gullies shall be set 135mm below top of kerb (10mm below wearing coarse).

At crossings the height of the dropped kerb above the wearing coarse shall be as follows:

Private Vehicular Access.....10 - 25mm  
Pedestrian, Cycleway or combined.....0 - 6mm

If using precast kerbs radii shall be formed using radius kerbs of the relevant dimension or 300, 450, & 600mm cut kerbs as appropriate to achieve a smooth curve.

If kerblines are formed using cast in situ concrete system it should incorporate a 20mm expansion joints at 25m centres and 4mm contraction joints at 5m centres minimum. Joints should be sealed with an approved 2-part polysulphide sealant.

*\*Available from Government Publications Sale Office, Sun Alliance House, Molesworth Street, Dublin 2 - Tel. 01 - 6793515.*

## **2.0 FOOTPATHS**

Carlow County Council require that footpath construction in all housing estate developments be of in-situ concrete construction or other approved surfaces in accordance with the requirements set out in “Recommendations for Site Development Works for Housing Areas” - Department of Environment and Local Government (November, 1998). Developers shall note that in the event that the inspector suspects that full construction depth has not been achieved, a number of core samples may, at Developer’s expense, be taken as a check prior to taking in charge.

Developers shall note that all precast kerbs shall be laid on edge and not on the flat.

Developers shall note that wheelchair/pram accesses shall be provided at all roadway junctions.

There shall be no steps incorporated in the footpath construction. Where necessary, a ramp shall be provided with a maximum gradient of 1 in 20.

If footpath construction is concrete it should incorporate a 20mm expansion joints at 24m centres and 4mm contraction joints at 3m centres minimum. Contraction shall be provided either side of all vehicular crossings.

Joints should be sealed with an approved 2 part polysulphide sealant.

All concrete footpaths to have a brushed finish or other approved and agreed in writing.

All pedestrian crossing points shall have tactile paving in accordance with guidelines given in “Traffic Management Guidelines”- Joint publication between Department of Environment and Local Government, Dublin Transportation Office and Department of Transport. \*

*\*Available from Government Publications Sale Office, Sun Alliance House, Molesworth Street, Dublin 2 - Tel. 01 - 6793515.*

## Appendix C: Water Services – Technical Requirements

All water services shall comply with the requirements set out hereunder:

Watermains shall comply with the Recommendations for Site Development works for Housing Areas issued by Department of the Environment and Local Government or as otherwise directed and specified by Carlow County Council.

All water services, including pumping stations and treatment plants, shall be certified as fit for purpose by a Chartered Engineer prior to being taken in charge.

A safety file will be required for all attenuation systems as well as for sumps, treatment plants and pumping stations. Two copies of the safety file will be sent to the Senior Engineer in Water Services prior to taking in charge.

### 1.0 Watermain Requirements

Specific conditions relating to watermains shall include the following: -

- 1.1 The minimum diameter for all watermains shall be 100mm diameter.
- 1.2 Pipes shall be only MOPVC, HPPE (PE100) or HDPE (PE100), Ductile Iron or CPE/PVC alloys. All plastic water pipes shall be blue in colour.

*MOPVC pipes* shall conform to the UK Water Industry Specification No. 4-31-08 and manufacturers shall operate a quality system in compliance with BS 5750 Part 2 (EN29002).

*HPPE pipes* should be of type PE-100 and have an SDR rating of 17.6, pressure rated to 10 bar. They shall conform to UK Water Industry Specification No. 4-32-17.

*Ductile iron pipes* shall conform to Class K9 of EN 545. Ductile iron fittings shall be Class K9. All ductile iron pipework shall be coated internally with a centrifugally applied cement mortar lining containing a sulphate resistant cement and shall be sealed with an approved bitumen or epoxy resin seal coat in accordance with BS 4722: 1988. External protection shall include a zinc coating to EN 545 under bitumen based coating to BS 3416: 1991.

Steel pipes shall conform to BS EN 10224

*CPE/PVC alloy pressure pipe* shall conform to BS PAS 27. All fittings should conform to this standard also.

The preferred watermain material is indicated on the following table:

Size of Pipe (mm)	Type Of Pipe
100 to 150	Mopvc, pvc-A, PE(100), DI
150 < 300	Mopvc, DI, PE(100)
> 300	DI

- 1.3 The connection to the public watermain shall only occur at a location agreed with the Area Engineer and when connecting the developer shall comply with all conditions set out on the permission to connect.
- 1.4 On distribution mains of 300mm internal diameter or greater, every hydrant shall be fitted with an isolation valve.
- 1.5 All service pipes should be MDPE.

MDPE service pipes and fittings shall conform to  
 UK WIS 4-32-17 for pipes  
 UK WIS 4-32-15 for fittings  
 UK WIS 4-32-14 for electrofusion fittings.

- 1.6 All EN1452 uPVC or PE100 SDR17.6 watermains shall have a nominal pressure classification of 10 bar and be pressure tested to 1.5 times it's nominal rating. All pressure tests shall be carried out in the presence of a Carlow County Council Water Inspector prior to connection to the public watermain.
- 1.7 The watermain within the site shall be sterilised and test certificates from an accredited laboratory tests shall be submitted to prove sterilization prior to connection to the public mains.
- 1.8 Laboratory test certificates for each section of the Watermain tested to be submitted.
- 1.9 No extensions shall be made to the watermains within the estate until it has been pressure tested and sterilised.
- 1.10 All watermains shall be fully looped. The loop shall contain a minimum of 4 No. houses and 1 No. hydrant.
- 1.11 All watermains junctions shall be fully valved, i.e. sluice valve on each spur of the junction. Sluice valves shall be double flanged; ductile iron resilient seal gate valves and shall comply with the relevant requirements of BS 5163: 1986 Type B and EN 1074 and have the BS Kitemark. The number of turns to open/close the valve must be  $n=2N + 1$  where N = the equivalent diameter in inches. All flanges shall be drilled to P.N. 16.

All sluice valves shall be ANTI-CLOCKWISE CLOSING, - LEFT HAND CLOSING

- 1.12 Air valves shall be Combined Air Valve type with isolating valve and sized accordingly single or double.

Double air valves shall have bodies and covers of cast iron to BS EN 1561 with flanged inlets of the size specified below. Valves shall be flanged and drilled to BS 4504-3.1. Each valve shall have a large and a small air escape orifice with an isolating valve. The isolating valve shall be a resilient seated gate valve to BS 5163 Type B (BS EN 1074) and shall be of the boltless bonnet design.

Air valves shall be provided at all summits on pipelines of 100mm or greater,

- 1.13 The developer shall provide a bulk water meter, Siemens 8000w or ABB Magmeter or other specified by Carlow County Council, at the connection point. It shall be fully commissioned and fully operational prior to connection to the public watermain. Calibration certificate and commissioning certificate to be issued to the Council as part of the as-built package, to include but not limited to the following, date, company, Engineer, configuration settings and pulse flow settings.
- 1.14 Minimum chamber size for bulk meter 1500mm internal diameter and chambers for sluice valves (SV) to be a minimum of the following:

Max. Pipe Size	SV Chamber Diameter
≤150mm	675mm
200mm to 250mm	900mm
≥ 300mm	1200mm

- 1.15 All magmeters, or similar approved, shall be either battery operated or shall have a permanent electricity connection where convenient.
- 1.16 Domestic water meters shall be installed on all water service connections in accordance with County Council Specification. These shall be located outside the curtilage, but not in the driveway, of each individual housing site. The sequence shall be as follows:-

Watermain -> Meter Unit -> Stopcock -> House

A non-return valve shall be placed just inside each building.

- 1.17 On site storage shall be provided for at least 24-hour water consumption and all water used on site except drinking shall be drawn through storage.
- 1.18 Individual water supply services shall be provided for each apartment. Domestic control units to Carlow County Council specification shall be provided one each service.
- 1.19 Watermain pipes shall have a minimum cover of 900mm in footpaths and verges and 1200mm in trafficked areas. Service pipes shall have a minimum cover of 600 mm.
- 1.20 All pipes shall be laid on a 150mm bed of rounded single sized pebble of 10mm nominal diameter or sand and haunched and covered to a depth of 300mm above the crown with similar material. The bedding directly underneath and directly over the pipe shall be lightly compacted while the sidefill shall be well

- compacted.
- 1.21 Pipes shall not be supported by stone or rock at any point. Rock shall be excavated to a depth of 150mm below the actual depth of trench required and backfilled with DOE Clause 503 prior to laying the pebble bed. All pipes shall be examined internally for dirt, stones, or any foreign matter and shall be thoroughly cleaned before laying in final position. To prevent foreign matter or vermin entering the pipe it is being laid, all open ends of laid pipes shall be plugged until the next pipe is ready for insertion.
  - 1.22 In ground that contains ashes or chemicals or material that could accelerate corrosion or deterioration of the pipe, the material to be used and method of laying shall be agreed in writing with the Water Section prior to laying.
  - 1.23 All trenches in or near roadways shall be backfilled with DOE Clause 804 or 806 and in compliance with the *Guidelines for the Opening, Backfilling and Reinstatements of Trenches in Public Road*
  - 1.24 Mechanical compactors should not be used until the total depth of backfill over the pipe exceeds 450mm.
  - 1.25 Gentle curves may be formed in the pipeline by angular deflection of the pipe joint. The angular deflection of each joint shall not exceed 2 degrees, or the manufacturers recommendation if less than 2 degrees. At the locations detailed below where the pipe needs to be restrained against movement under pressure concrete thrust blocks shall be provided.
  - 1.26 Thrust blocks must be designed in accordance with CIRIA Report 128 'Guide to the design of thrust blocks for buried pressure pipelines' and constructed from grade 35/20mm concrete in undisturbed ground having regard to both the pipeline thrusts developed during operation pipeline testing conditions and operations and surge pressures. Thrust blocks are therefore required at each;
    - tee-junction,
    - bend,
    - end cap,
    - At both ends of a sluice valve chamber,
    - Abrupt change in vertical or horizontal alignment,
    - Duck foot hydrants

Support blocks are required where pipes are laid above ground due to rocky or swampy conditions. They are also required to anchor pipes where gradients are 1:6 or steeper. Design of supports and joints should allow for longitudinal movements due to thermal effects and thrusts due to internal pressure. Design and dimensions of thrust blocks should be indicated on construction drawings.

- 1.27 All watermains to be overlaid with a blue marker tape suitable for water mains containing a tracer wire.
- 1.28 The depth of the sluice valve spindle cap shall not be greater than 300 mm below finished ground level.
- 1.29 Hydrants shall be provided so that no house is greater than 46 m from a fire hydrant. The depth of the hydrant outlet shall not be greater than 200 mm below finished road level. Hydrants shall be screw down type to BS 750.
- 1.30 All valve chambers, surface boxes, indicator plates and marker posts shall comply

fully with the requirements of “Recommendations for Site Development Works for Housing Area” Department of Environment and Local Government 1998 and IS 261 and BS 3251 where applicable. All valve and hydrant chamber covers shall be painted canary yellow (colour reference No.309 of BS 381C).

- 1.31 All fittings, valves, meters and hydrants to be constructed in accessible public areas.
- 1.32 All manhole covers to comply with the loading requirements EN124, IS261 or BS5834.

Place of Installation	EN124	IS261	BS5834
Carriageway	D400	Grade A	Grade A
Footpath	B125	Grade B	Grade B

For the avoidance of doubt a manhole cover rated for carriageway loading shall be used where occasional traffic can be expected.

- 1.33 All break tanks or break cisterns shall,
- be a closed vessel having a tightly fitting access cover bolted or screwed in position
  - be suitably maintained – i.e. inspected and regularly cleaned – and where necessary, suitably lined or coated to preserve the potability of the water;
  - have an air inlet and an overflow pipe or pipes all suitably screened; where necessary, be insulated against heat and
  - be supplied exclusively from a service pipe, via a ball valve.

The break tank shall be of a size appropriate to the development and should avoid the stagnation of potable water caused by oversizing. Where this occurs Carlow County Council will require that the tank be replaced with a properly sized tank at the expense of the developer.

- 1.34 Regarding the installation of booster pumps for multiple occupancy buildings - the service manifold for each separate unit shall be located in the footpath outside the building at a location agreed by the Area Engineer. In general
- Buildings of 3 storeys or more shall be equipped with balancing tanks and booster pumps on the rising main to top storey units to ensure adequate pressure to top storey units and
  - only indirect pressure boosting will be permitted i.e. pumping from a break cistern supplied from the public water main.

**Note for Designers and Developers**

**It is the responsibility of the designer to ascertain whether or not the Council’s water mains have sufficient capacity to meet the requirements of the proposed installation. The Council may, at the expense of the designer or client, carry out pressure and flow tests to permit the designer to calculate the hydraulic capacity of the Council’s water mains and so decide on their suitability or otherwise, for the proposed installation.**

**It is also the responsibility of the designer to ensure that any boosting proposal is sufficient to meet the requirements of the development; subject to any conditions the Council may impose to protect the public water supply. Although there may be sufficient flow and pressure at the boundary of the site to serve the proposed development without internal boosting the designer must include a margin for future demands on the system**

- 1.35 Marker plates shall indicate the following: -
- (i) Diameter of main.
  - (ii) Indicates the direction of closing (for SV only) (arrow also acceptable).
  - (iii) Distance of fitting from marker post/plate.

All marker posts/plates shall be positioned in so far as is practicable, away from the carriageway verge and as close or as tight as possible to permanent structures - in order to prevent traffic impact.

## ***2.0 Collection Systems***

**All collection systems shall comply with the Carlow County Council policy on Sustainable Urban Drainage Systems (SUDS)**

The following minimum specific requirements shall apply

- 2.1 A separate storm water and foul water system shall be provided.
- 2.2 Access manholes shall be provided every 90 m, at all changes of direction, at all changes of gradient, at the head of all sewer and drain lengths, at all sewer junctions and all changes in pipe diameter, and at the point of connection of a branch drain with a main drain or sewer or the branch drain within 12 m of such connection.
- 2.3 Manholes shall be constructed, channeled and benched strictly in accordance with “Recommendations for Site Development Works for Housing Areas”, Department of Environment and Local Government 1998, including the provision of steps and ladders.
- 2.4 Manhole covers and frames on all roads footpaths, hard shoulders and vehicular accesses shall comply with Standard IS/EN 124:1994, loading class D400 double triangular, badged to indicate FS or SW as appropriate and to Carlow County Council approval.
- 2.5 Manhole sizes for pipe sizes up to 300mm to be in accordance with “Recommendations for Site Development Works for Housing Areas” – Department of the Environment and Local Government (1998). For pipes sizes greater than 300mm NRA Manual of Contract Documents for Road Works to be used.
- 2.6 The connections of drains to sewers shall be made by one of the following methods. a) Connection shall be made at a manhole where possible. b) Where

- there is not an adjacent manhole, it maybe necessary to construct a new manhole.
- c) Where connecting directly to a sewer or a drain, an oblique or curved square junction pipe inserted in the main may be used. d) As an alternative to method (c) an oblique saddle may be used. Saddles should not be used on pipes of 100mm diameter, or to connect pipes of the same diameter. All saddled connections to sewers shall be made in the top left or right quadrant of the pipe by using coring equipment. Intrusions greater than 5mm will not be permitted.
- 2.7 The developer shall provide the following on completion of the development.
- Details of water and air tests carried out on foul water sewers.
  - Infiltration test for manholes.
  - CCTV survey to Carlow County Councils specification including location map and condition report.
  - Record drawing of all underground services including sewer survey in Mapdrain format. All of above to be certified by a chartered Civil Engineer with professional indemnity insurance. The provision of above information shall be the subject of a bond at planning stage.
- 2.8 On completion of the construction works, all sewers (including tanks, sumps etc.) for taking in charge shall be thoroughly cleaned and all deleterious material removed. They shall be maintained in a clean and serviceable condition by the developer until they are taken in charge by Carlow County Council.
- 2.9 The developer shall submit to the Planning Authority, a CD-ROM or similar approved containing files of the as-constructed drainage layout. Manholes will be allocated a permanent reference number to National Grid. A record drawing of the area is to be issued by the developer showing drainage with each manhole individually referenced.
- 2.10 The developer shall carry out a sewer condition survey of all sewer lengths that are wholly located in the carriageway and/or footpath and/or grass margin and/or to be “taken in charge”. The survey which shall be wholly at the developers expense shall be carried out by a contractor currently approved by Carlow County Council and to Carlow County Council’s standard. The survey shall include an internal inspection of sewers using CCTV equipment. A full copy of the results DVD and Photo CD shall be forwarded to the Planning Authority.

### ***3.0 Foul Water Sewer Specific Requirements***

- 3.1 Foul sewers serving 2 or more houses shall be a minimum of 150 mm in diameter.
- 3.2 Only foul sewage shall be discharged to the foul sewerage system. No surface water shall be discharged to the foul sewerage system.
- 3.3 All foul sewers servicing more than one property must be located on public space. Each house shall have its own individual connection to the main sewer. A manhole shall be placed on the service pipe, within the house site, not more than 12 metres from the junction with the main foul sewer.
- 3.4 Applicant shall construct new foul sewer manhole at connection to public sewer to Carlow County Council satisfaction.
- 3.5 All foul sewers shall be designed and constructed to accommodate 6 times average foul water flow and gradients should be selected so as to maintain self-

- cleansing velocities under normal discharge conditions.
- 3.6 Separate sewer service connections shall be provided for each dwelling house.
- 3.7 The gradients for the head runs of sewers shall be as set out in Appendix G of “Homebond - House Building Manual” - National House Building guarantee Company Ltd. (Available from Homebond, Construction House, Canal Road, Dublin 6.)

#### **4.0 Surface Water Sewer Specific Requirements**

- 4.1 Surface water shall be disposed of on a separate system basis.
- 4.2 Only clean uncontaminated surface water shall be discharged to the surface water system.
- 4.3 All surface water sewers servicing more than one house must be on public space. Each house shall have its own individual connection to the main surface water sewer. A manhole shall be placed on the service pipe, within the house site, not more than 12 metres from the junction with the main surface water sewer.
- 4.4 All surface water pipes serving more than one house shall be a minimum of 150mm diameter.
- 4.5 No surface water from private property shall flow onto the public road.
- 4.6 Trapped Precast concrete gully pots to BS 5911 are preferred especially if there is provision for on-site attenuation however gully chambers to the minimum dimensions given in “Recommendations for Site Development Works for Housing Areas” may be used with approval.
- 4.7 Lockable type gully grates to be utilised on all surface water drains shall comply with Standard IS/EN 124:1994, loading class D400 shall be used on distributor roads/major access roads, class C250 on residential roads/minor access roads and to Carlow County Council approval. Minor access road serves less than 100 dwellings, major access road serves more than 100 dwellings.
- 4.8 All surface water sewers shall be designed and constructed as per the design calculation method described in “Recommendations for Site Development Works for Housing Areas” Department of Environment and Local Government 1998, or other approved methods.

#### **5.0 Pumping Stations**

**All pumping stations shall comply with the detailed specification available from Water Services, Carlow County Council. Additional works required as a result of the failure of the developer to adhere to the specification will be charged to the developer.**

The following minimum specific requirements shall apply. Please note these requirements are not exhaustive and reference will be made to Carlow county councils detailed specification for pumping stations

- 5.1 The Developer is to submit the design of the sewerage pumping station to the Local Authority for approval.

- 5.2 The Developer is to submit the design of the rising main (if applicable) to the Local Authority for approval.
- 5.3 The developer is to submit the construction details and layout design plans of the sewerage pump station to the Local Authority for approval. This layout drawing should be similar to the standard layout drawing provided by Carlow County Council.
- 5.4 Locate to permit an overflow pipe from the pumping station to the nearest public foul sewer, otherwise provide a suitable overflow chamber at the pumping station which will have the capacity to cater for 24 hours flow from the proposed development, or as required by the Local Authority.
- 5.5 Pumping station to be located away from houses and buildings to minimise odour and noise.
- 5.6 Pumping station the located in areas free from flooding.
- 5.7 Suitable access is to be provided for vehicles to pumping station for maintenance purposes.
- 5.8 Provide suitable lifting equipment and devices to appropriate standards and reasonable overhead access.
- 5.9 Storm overflows at pump stations are to designed in accordance with Formula A which is recommended by the UK Technical Committee on Storm Overflows and Disposal of Storm Sewerage, Final Report 1970
- 5.10 All storm overflows at pump stations must have a flow meter installed to measure frequency and quantity of overflows

#### Pump Type and Specification

Specification to comply with Sewers for Adoption 4<sup>th</sup> Edition, WRA, BS, 8301, BS 80555 and the following:

- Submersible duty and standby pumps or equivalent, automatic operation.
- Ultrasonic level control probes.
- Run/duty/standby switch for pumps with manual and automatic changeover.
- Pump no. 1 and 2 starters.
- Separate hours run meter for each pump.
- Run and trip lights for each pump.
- Oil and water sensors on each pump and seal fail light.
- Heat sensors on motor windings.
- Galvanised guides/slide rails on lifting chains (stainless steel – 8mm BS 4772/EN598).
- Suitable non-return valve on the overflow from the pump sump.
- Flow recorder.
- Male Bauer connection with sluice valve in separate valve chamber to suck out sewerage from the main pump sump.
- Provision for telemetry equipment in the control panel capable of collecting and transmitting data from the pumping station. Data to include flow data, high wet well level sensor, mains power sensor, mains power failure, level control system failure, no.1 pump starter, no.2 pump starter, no.1 pump

running and no.2 pump running. Provide link to location designated by Local Authority.

- Control panel kiosk and manhole covers to be vandal proof galvanised steel construction with substantial locking systems.
- Control Kiosk to be stand alone beside pumping station and to include:
  1. Flow recording.
  2. Pump control panel c/w isolators, fuses etc.
  3. Provision for ESB meter.
  4. Provision to restart pumps from control panel.
  5. Disconnectors on pump electrical leads.
  6. Plug/input device for portable generator.
  7. ½' water connection for sump cleaning etc.
  8. Wash hand basin with hot and cold waters.(welfare kiosk)
  9. Heater in control Kiosk.
  10. Light in control Kiosk.
  11. 220 v and 110 v electrical weatherproof sockets

Provide all hand rails, fencing, security and equipment to comply with health and safety requirements and to the satisfaction of the Local Authorities Safety Office.

## **6.0 Treatment Plants**

- 6.1 Alerter system to call out emergency response in the event of plant breakdown.
- 6.2 Anti-intruder perimeter fencing where appropriate to be provided.
- 6.3 Control panels fixed with a socket to accept a supply from a generator.
- 6.4 The following extra specific facilities shall be provided at Treatment plants:  
Capacity to measure inflows and outflows and to take influent and effluent samples Automatic recording of the principal operating parameters of the particular process. Duty and standby units for all equipment essential to the correct functioning of the process Sludge holding tanks, sealed and suitable for connection to a sludge tanker, capable of holding 3 months sludge output from the plant. It must also be fixed with the means to filter the gases given off from the sludge holding tank before releasing them into the environment. Plants shall be located to ensure distances to current and proposed development is in accordance with guidelines set down by the EPA.
- 6.5 Telemetry Link to Carlow County Council Water Services Specification.
- 6.6 Storm overflows at treatment plants are to designed in accordance with Formula A which is recommended by the UK Technical Committee on Storm Overflows and Disposal of Storm Sewerage, Final Report 1970
- 6.7 All storm overflows at treatment works must have a flow meter installed to measure frequency and quantity of overflows

### ***7.0 Commissioning of Plant and Pumps***

A commissioning report from the plant supplier or from an agreed third party shall be prepared to the satisfaction of the local authority before the plant is brought into operation. The developer will be required to obtain the necessary feed source for the plant in order to enable its performance to be measured.

#### **Safety Requirements**

Each plant shall have a safety statement and safe work practice sheets which will be the responsibility of the plant operator to implement and update as required.

### ***8.0 Attenuation tanks / structures***

The following minimum specific requirements shall apply.

- 6.1 Full design details of the attenuation system shall be included with the request for taking in charge. Provision for regular inspection of hydrobrake to be included.
- 6.2 Maintenance schedule required including safety systems to be adopted.
- 6.3 Performance certificate for hydrobrake shall be included with request for taking in charge.
- 6.4 Access for vehicular traffic for maintenance requirements identified in schedule.

## **Appendix D: Open Spaces – Specification For The Development Of Grassed And Landscaped Open Space Areas.**

With the exception of any features to be retained, grassed open space areas shall be free of rock and all hazardous objects and be developed for usage by persons present on the areas for the purpose of engaging safely in recreational activity.

### **1.0 TOPSOIL**

Topsoil shall conform to the description of topsoil set out in British Standard Specification No. 3882: 1994, entitled “Specification for Topsoil”. Topsoil shall be good quality medium top spit loam, easily moulded when moist. It must be neither too sticky nor leave a smooth polished surface when smeared. It shall be free from all chemical or other pollutants without excessive proportions of stones or flints and those present must not exceed 50mm gauge. It must not include subsoil, excessive proportions of clay, sand, chalk or lime, nor may it include rubbish or other extraneous material, pernicious weeds or couch grass whether roots or top growth, or roots of trees or shrubs. A minimum depth of 150mm of topsoil is required.

### **2.0 GRADING AND CULTIVATION**

All grassed open space areas should be suitably graded so that the areas can be safely cut by four-wheel drive ride on mowers. Surface cultivation shall be carried out where appropriate and shall be as defined and described in British Standard Specification No. 4428; 1989, entitled “Code of Practice for General Landscape Operations”, Section 4.

### **3.0 DRAINAGE**

Drainage works shall be provided where appropriate and for the reasons outlined in British Standard Specification 4428; 1989, entitled “Code of Practice for General Landscape Operations”, Section 3.

Connection to existing drains or manholes shall be executed in a careful and workmanlike manner and to the satisfaction of Carlow County Council. Sand Slit Drainage to consist of a 300mm X 50mm trench. The spoil from trench excavations shall be removed simultaneously with the trenching operation. The trench shall have the profile of 225mm approx. of clean evenly sized washed pebble topped to surface levels with silica sands Grade T.

**4.0 SEEDING OF GRASS AREAS** Grass seeding shall be carried out in accordance with British Standard Specification 4428; 1989, entitled “Code of Practice for General Landscape Operations”, Section 5. In the development of grass landscape areas the seeds to be used are the amenity grass mixtures and certification of these mixtures are to be presented to Carlow County Council. On no account should grass seed mixture intended for high yield grass for agricultural purposes be used. Prior to seeding 10-10-20 fertiliser to be spread at a rate of 125kg per Hectare.

**4.1 Preparation of the Seed Bed** The seed bed shall be prepared in accordance with British Standard 4428; 1989 entitled “Code of Practice for General Landscape Operations”, Section 5.3. No seed shall be sown until the cultivation and preparatory work has been approved. Finish topsoil level shall be 25mm above adjoining paths,

kerbs and manholes. Sowing of seed strains shall be carried out during calm weather conditions with equal sowing in traverse directions at the specified rate per square metre as described in British Standard 4428; 1989, entitled “Code of Practice for General Landscape Operations”, Section 5.3.

#### ***4.2 Initial Topping Cut***

Immediately before cutting, all stones above 25mm in any dimension should be hand picked and the area should be crossed with a lightweight roller to firm the grass and consolidate the surface.

When the grass is established from 40mm to 75mm high, according to seed mixture, it should be topped with a rotary mower so as to leave from 25mm to 50mm of growth and to cut weeds, in order to control the growth of coarser grass and to encourage tillering.

A mowing programme should be organised that gradually reduces the height of the grass. Grass cutting machinery should be very sharp and in good condition to avoid pulling out young seedlings.

When cutting takes place without a box all raisings should be spread evenly to prevent damage to the growing grass beneath. This applies particularly to grass cut during periods of dull or wet weather.

### **5.0 SUPPLY AND PLANTING OF TREES**

#### ***5.1 Quality of Plants***

All feathered trees and ordinary nursery stock trees shall conform to British Standard 3936; Part 1, 1992, and all advanced nursery stock trees shall conform to British Standard 4043; except where otherwise specified. They shall have a strong fibrous root system with sufficient anchorage roots to give stability, a straight self supporting stem with at least three lateral branches, and be in a condition for successful transplanting.

Bare roots shall be protected with hessian or other suitable material during delivery to site. Plants with balled roots shall be supplied with the root system, together with the original ball of soil securely wrapped with hessian, polyethylene sheeting or other suitable material during delivery to site.

Trees shall be supplied with a rootball of adequate diameter and depth appropriate to the size and species of the tree. The minimum diameter of the rootball in all cases shall be not less than 10 times the diameter of stem measured at 300mm above ground level.

Full standard trees shall be 12 to 14 cm stem circumference measured 1m from the root base.

#### ***5.2 Timing Of Planting and Delivery to Site***

Planting of field grown plants shall not be commenced before 30th September or continued after 31st March following unless authorised in writing. Planting will be suspended during periods of severe frost or when planting positions or areas are water logged.

No plant shall be delivered to site until the preparation of its planting position or area is practically complete. The landscape contractor will be responsible for the adequate protection of all plant material from the time of delivery from whatever source until

Planting has been approved. Care is to be taken to protect the foliage and roots from adverse weather conditions including heat, frost and drying winds. Where delay between delivery of plants and planting is unavoidable, the landscape contractor shall heel in property bare rooted plants in a prepared trench and pack moist soil/compost around the root. In frosty weather the plants shall be given extra protection with straw or similar material. Pot grown and balled rooted plants shall be protected from exposure to direct sunlight and shall be watered as necessary to prevent drying out of the roots. All pot grown and balled root plants shall be thoroughly watered two hours prior to the removal of the pots or wrappings. Pots, containers and other protective materials shall not be removed until immediately prior to planting.

### ***5.3 Setting out and Planting Instructions***

The landscape contractor shall carry out planting in accordance with supplied drawings. All trees shall be planted in the positions and in numbers indicated on the drawings and shall be planted in an informal manner so as to avoid a rigid matrix.

Unless otherwise agreed the ground shall be cultivated to a depth of 600mm in all shrub-planting areas. In paved and hard surface areas, tree pits 1220mm square and at least 1200mm in depth shall be prepared by the excavation and removal from the site of surfacing material, hard-core foundation and subsoil prior to the importation of which shall conform to the description of topsoil as set out in British topsoil Standard Specification No. 3882: 1994, entitled "Specification for Topsoil".

### ***5.4 Planting Method***

Standards of workmanship and materials used for planting and staking shall be as is outlined in British Standard Specification No. 4428; 1989, entitled "Code of practice for General Landscape Operations", Section 7 - amenity tree planting, Section 8 - woodland planting, Section 9 - planting of shrubs, herbaceous plants and bulbs.

The roots of all bare root shrubs and transplants are to be treated with alginure root dip prior to planting, using a mixture of one part alginure to three parts water. Tree stakes should be driven into the ground off centre of the prevailing wind side of tree. The pit will be partially backfilled with a mixture of topsoil, compost and fertiliser and the tree placed in the pit to the depth of the nursery soil mark, ensuring the roots are fully spread. The remaining mixture shall be used to cover the roots and shall be distributed amongst them by shaking them with a gently up and down movement and then firming by walking.

Each tree shall be firmly secured to the stake after planting so as to prevent excessive movement or abrasion using a rubber buffer between the tree and stake. The tree shall be secured at the top of the stake about 0.6M from ground level. These ties shall allow for growth or secondary thickening of the tree stems.

On completion of planting any broken branches shall be pruned. After planting trees, they should be watered thoroughly, with approximately 30 litres per tree.

### ***5.5 Tree Stakes Ties and Tree Guards***

Trees shall be staked using straight stakes, 1.53M in length (2.75M in length where use

of tree guards is specified), driven 750mm into the ground before planting. These poles shall be impregnated with wood preservative in accordance with I.S. 131; 1964. The poles shall be 90mm to-100mm in diameter at the heavy end and 75mm to 90mm at the light end. They shall be tapered to a point of 300mm in length at the heavy end and shall be trimmed to an angle of 45° at the light end after planting. Tree guards shall be manufactured from 50mm X 50mm X 10 gauge weld mesh and shall be 1830mm X 920mm cylinder shape formed to 300mm diameter and are to be hot dipped galvanised, with an overall weight of 0.25kg/. Where the use of tree guards is specified, a 2.75M length of tree stakes specified above should be used.

## **6.0 SUPPLY AND PLANTING OF SHRUBS, CLIMBING PLANTS AND HEDGES**

Shrubs shall be provided and planted in precise locations as agreed by Carlow County Council. Shrubs shall be as is defined and described in British Standard Specification No. 3936; 1992 entitled “Nursery Stock Part 1. Specification for Trees and Shrubs”.

Standards of workmanship and materials used shall be as is described in British Standard Specification No. 4428; 1989, entitled “Code of Practice for General Landscape Operations”, Section 9. All shrubs are true to name, vigorous, well grown specimens of their type, free from disease and insect pest. All shrubs shall be container grown. Shrubs considered to have inadequate size development at the time of planting must be replaced upon the instructions of Carlow County Council.

### **6.1 Replacement Planting**

The landscape contractor shall replace during the following planting season all plants, which fail to show growth or develop full foliage during the first growing season after planting. All such replacement planting shall be at the landscape contractors expense who shall also be responsible for any preparatory and other work necessary to be properly carried out, including the removal and disposal of dead plant material.

### **6.2 Grass Maintenance on Reseeded Areas**

The Developers shall carry out the following operations prior to taking in charge by Carlow County Council - stone picking down to 25mm, weed elimination, cutting, repair of all erosion and settlement, filling of all holes to ensure uniform grading throughout and reseeded as necessary to establish a uniform and healthy stand of the specified grasses.

## **7. Playgrounds**

Any playgrounds located on public open space that form part of a planning application or that are required by way of a planning condition will be constructed in accordance with the following British Standards: BS7188 Impact absorbing playground surfacing; performance requirements and test methods, BS EN 1177 Impact absorbing playground surfacing; safety requirements and test methods; BS EN 1176 parts 1-7 Playground equipment.

Appendix F: APPLICATION FORM  
**COMHAIRLE CHONTAE CEATHARLACH  
CARLOW COUNTY COUNCIL**

Applications to have Development Taken in Charge by Carlow County Council

Developers Name \_\_\_\_\_

Developers Address \_\_\_\_\_

Telephone No \_\_\_\_\_

Development Name \_\_\_\_\_

O.S. Map No. \_\_\_\_\_

Planning Ref No: \_\_\_\_\_

Development Contribution \_\_\_\_\_

Receipt Numbers \_\_\_\_\_

Connection Fee Rec Nos \_\_\_\_\_

No of Houses \_\_\_\_\_

No of Apts/Duplex \_\_\_\_\_

As constructed Drawings

Completed by: \_\_\_\_\_

Qualification: \_\_\_\_\_

Items submitted with this Application Form (Tick as Appropriate )

Safety File; \_\_\_\_\_

Vesting Maps and Copies of Wayleaves \_\_\_\_\_

As-Constructed Drawings and CCTV Surveys \_\_\_\_\_

Drainage and Services layout Plan (diskette) \_\_\_\_\_

Third Party Certificates (e.g. Watermain, Sterilisation,  
Watermain pressure test, Structural Stability) etc \_\_\_\_\_

Certificates from independent service suppliers  
(Bord Gais, Eircom etc) \_\_\_\_\_

Public Lighting Design and Certificate from ESB  
Contracts Ltd \_\_\_\_\_

Grass Seed Mixture Certification \_\_\_\_\_

**I the undersigned hereby apply to have the following elements of the above development taken in charge by  
Carlow County Council**

**Signed** \_\_\_\_\_  
**Developer**

**Date** \_\_\_\_\_

**THIRD PARTY CERTIFICATION**

**1**  
**Certificate No. 1**

For the benefit of Carlow County Council, this is certify that:

- (a) Sewers have been tested and passed in accordance with the requirements of Clause 3.20 of “Recommendations for Site Development Works for Housing Areas” – Department of Environment Heritage & Local Governments (Nov 1998)
- (b) Water pipes have been tested, passed and sterilised in accordance with the requirements of Clause 4.18 of “Recommendations for Site Development Works for Housing Areas” – Department of Environment Heritage & Local Governments (Nov 1998)

**Signed** \_\_\_\_\_  
**Third Party**

**Date** \_\_\_\_\_

**Qualification** \_\_\_\_\_

**Details of Professional Indemnity Insurance (copy to be attached)** \_\_\_\_\_

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**Certificate No. 2**

For the benefit of Carlow County Council, this is to certify that the roads and footpaths, public lighting, open spaces and water services and sewers comply with the requirements of Carlow County Council’s “Taking in Charge Policy for Private Housing Developments” document.

**Signed** \_\_\_\_\_  
**Third Party**

**Date** \_\_\_\_\_

**Qualification** \_\_\_\_\_

**Details of Professional Indemnity Insurance (copy to be attached)** \_\_\_\_\_

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**Certificate No. 3**

For the benefit of Carlow County Council, this is to certify that the development complies with the Planning Permission granted.

\_\_\_\_\_  
<sup>1</sup> Third party certification is required only when specified in a planning condition related to the development

Signed \_\_\_\_\_  
Third Party

Date \_\_\_\_\_

Qualification \_\_\_\_\_

Details of Professional Indemnity Insurance (copy to be attached) \_\_\_\_\_

Where the stated frequency is marked \*, and the materials are known from experience of the source to have good compliance, the Carlow County Council Inspector may agree to a reduction of the stated frequency of testing. (N) indicates testing to be carried out by an Independent Carlow County Council approved Laboratory.