

QUALITY GUIDANCE ROAD AND SEWERS

Civil Engineering Compliance & Site Standards Manual



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This document has been created with the aim to assist in delivering consistently high-quality work on infrastructure.

Its purpose is to:

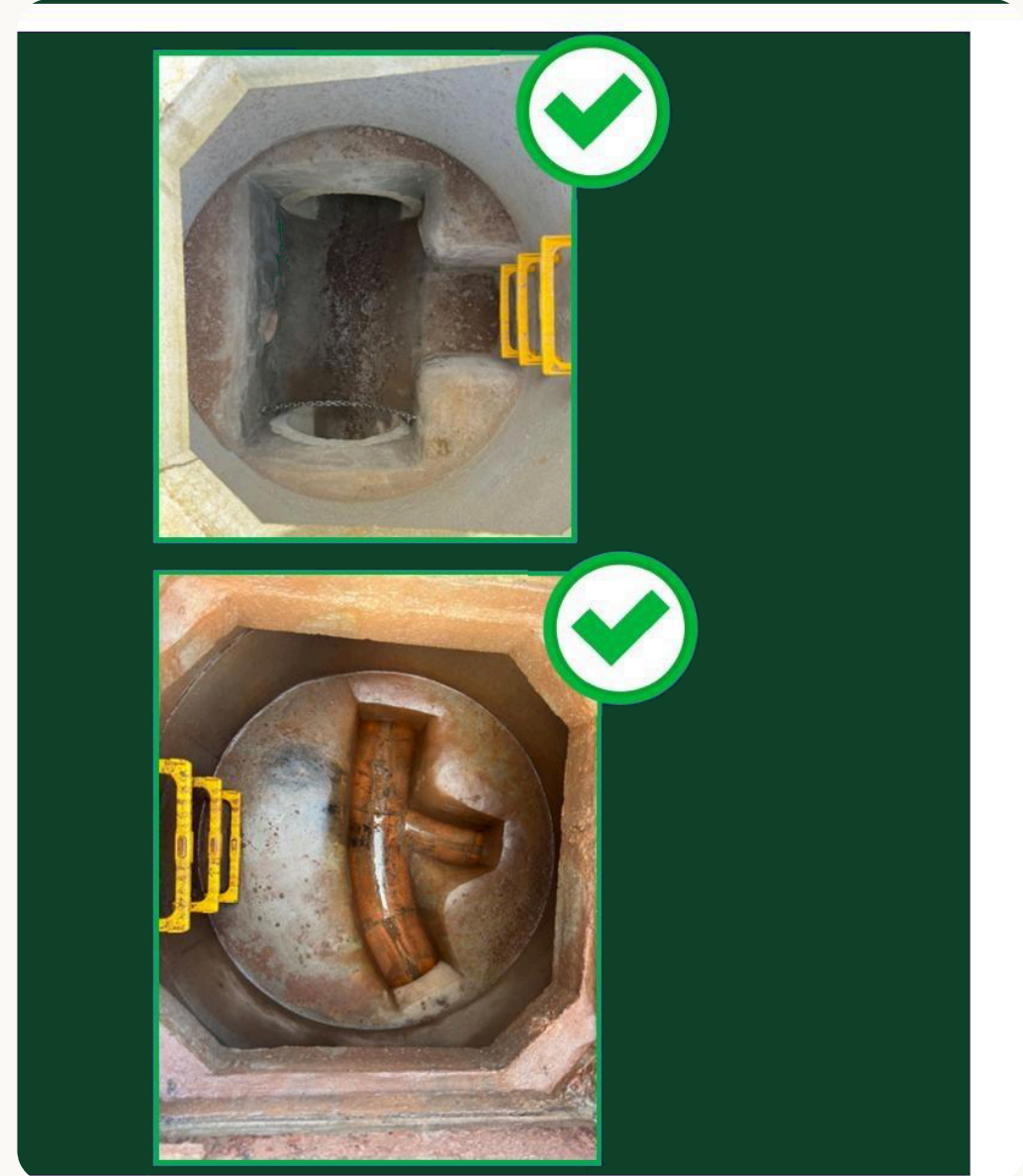
- Clarify expectations around audit processes and compliance checks.
- Provide practical pointers and visual references to avoid common defects.
- Ensure standards are met for drainage, ducting, kerbs, tarmac surfacing, and associated works.
- Help improve communication between site teams, contracts managers and surveyors.

The document is broken down into clear sections, each focusing on a key part of road and sewer construction. You will find helpful audit guidance, checklists, and design tolerances throughout. By using this guide, teams can plan, prepare, and complete work to the right standard.

For any queries or to book audits, please contact your Contracts Manager

Stage	Timing	What Needs To Happen	Responsible	Notes
Booking	As early as possible	Email date, area, duration, drawing + sub-bies used to: Ashvalequality@ashvalece.co.uk. Ensure Highway & Water authorities are made aware of planned asphalt	Contracts Manager / Site Supervisor	Need to update team if anything changes
Base & Binder 7 Day Audit	7 Working days before tarmac	Manholes/gullies need to be exposed by site for the audit team; duct pegs in if no kerbs. Issues are flagged for action	Contracts Manager / Site supervisor	Issues not tracked at this stage
Base & Binder 2 Day Audit	2 Working days before tarmac	All work should be complete at this stage; Major & Minor issues assigned on Reflow	Contracts Manager / Site Supervisor	Minor = fix within 2 weeks. Major = fix prior to tarmac
Post-Binder Audit	Within 3 days of binder being laid	Dips and surface inspection	Contracts Manager / Site supervisor	Must carry out level survey and send to Surveyor
Wearing Course & Block Paving Preliminary Audit	As early as possible, ideally 1 month	Dip check; flag all remedials	Contracts Manager / Site Supervisor	Checks if road is on track for surface course
Wearing Course 2 Day Audit	2 Working days before tarmac	All work should be complete at this stage; Major & Minor issues assigned on Reflow	Contracts Manager / Site supervisor	Minor = fix within 2 weeks. Major = fix prior to tarmac
Block Paving Final Audit	1 Day after completion	Inspect paving quality & confirm previous issues resolved	Contracts Manager / Site Supervisor	Will require close out prior if Major issues found on the prelim

- Manholes are to be fully sealed and watertight.
- Chamber rings are embedded into the base and concrete benching.
- Benching is smooth and sloping at a gradient of 1 in 10 to 30.
- Where pipes are 600 in diameter or greater, self-cleaning toe holes are to be formed.
- Suitable landing platforms to be allowed for at base of steps.

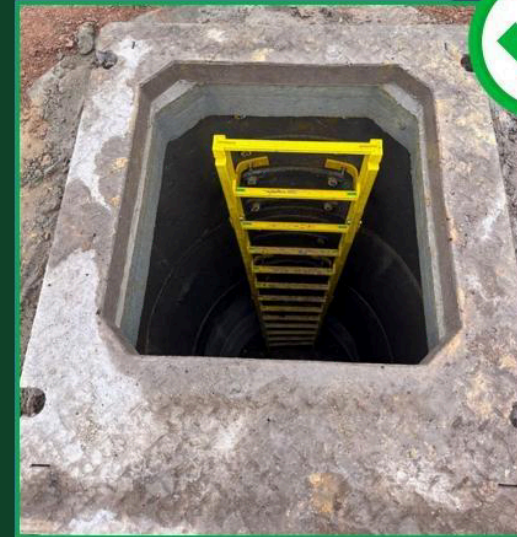


Steps / Ladders, Raising Sections and Depth to Step

- Steps are to be aligned with the biscuit opening, with the top step no greater than 675mm from the cover level.
- Chambers with depths greater than 3m to soffit level will require a ladder fixed securely and not protruding through the biscuit opening.
- Raising sections are to be fully bedded and neatly pointed. If brickwork is to be used to raise ironworks, then bricks will be solid class B engineering bricks laid in English bond.
- The finished thickness of the mortar bed shall be between 10mm and 25mm.
- Min 1 course of brickwork or seating ring with a max distance to top step of 675mm.
- Resin mortar to be used if covers are set less than 24 hours prior to asphalt or, if requested on the drawings.

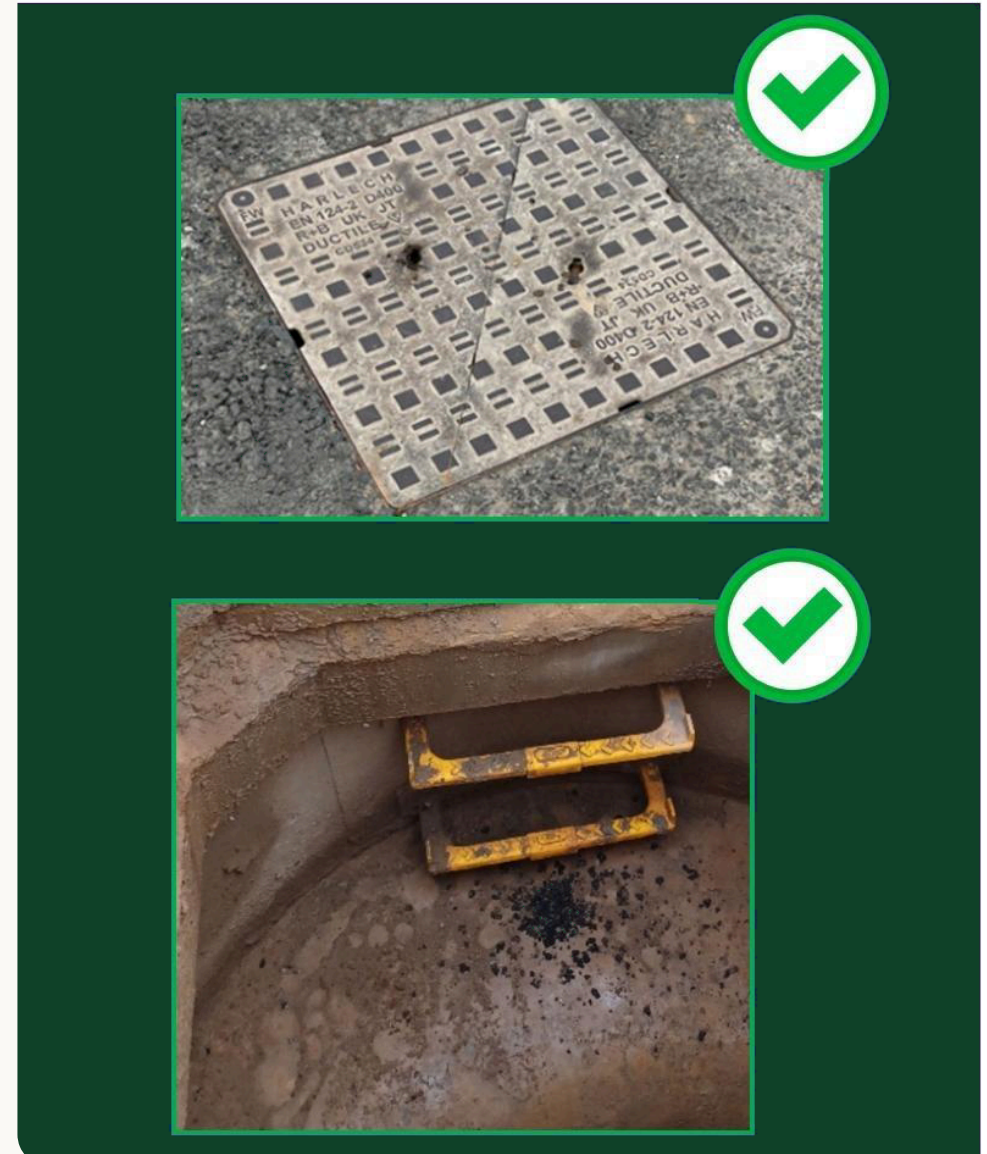
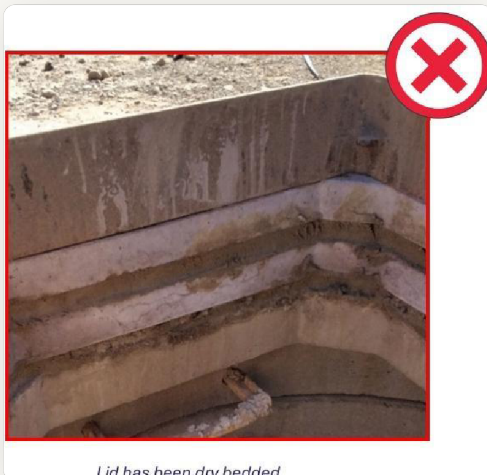


Raisers misaligned, lid and top raising section dry-bedded and damaged



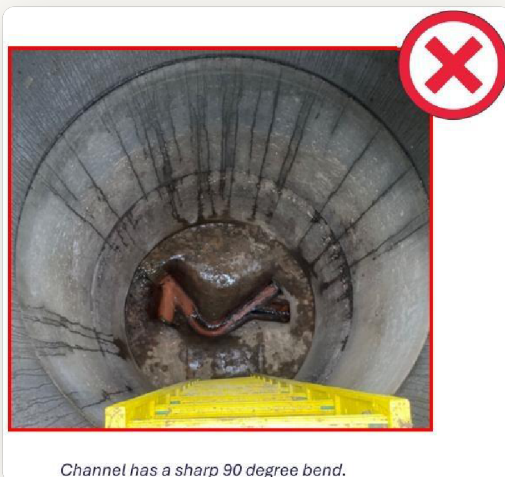
Lids & Frame, Pointing and Raising to Level

- Lids to be D400 (unless specified otherwise) and have a mortar bedded, neatly pointed.
- Precast rings are to be jointed with Tokstrip or mortar and all lifting eyes grouted to seal.
- Lids to be labelled correctly and free of damage.
- Depth of 150mm or 100mm depending on council.



Safety Chains, Channel and Pipe Size

- Manholes will be constructed so that chamber diameters, and pipe sizes are all as per the design.
- Proprietary channels to be used where pipes are less than 300mm diameter.
- Safety chains to be installed when indicated on drawings — typically on pipe >600mm.
- The mainline channel should not be installed as a sharp 90-degree bend, rather 2no 45-degree bends should be used.



Laterals and Backdrops

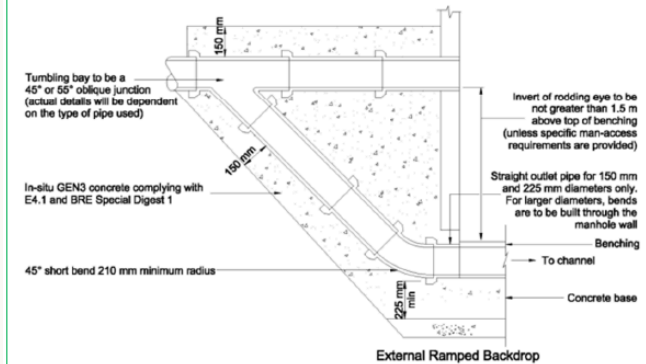
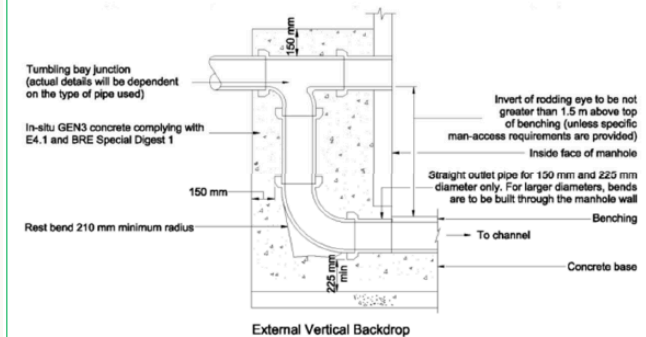
- Lateral pipes should curve with the flow on to the mainline with level soffits.
- Pipework will be laid to the designed gradient and Inspection chambers are to be installed and raised well above ground level with lids secured.
- Backdrop pipes will be cut flush with chamber wall and sealed.
- Any additional laterals or deviations from the design is to be agreed by the client and local water authority.

- Ensure that backdrop connection is cored through the ring not square cut.
- 1st off IC rotated to suit plot drainage and outlet pointing toward manhole.
- All 1st off ICs to be surveyed by an engineer prior to base & binder.



Figure B 16
Typical vertical and ramped backdrop detail (rigid materials)
For use in manhole types A to D

Note: Steeper gradients are preferred to the use of backdrops.
Type of backdrop to be used to be agreed with the sewerage company.



Biscuits and Damaged Rings

- Cover slabs and seating rings are to be free from damage.
- Cover opening sizes need to be as per the manhole schedule and site specific detail.
- In-situ formed slabs formed near to the chamber. Allow 7 days to set.



Crack in ring.

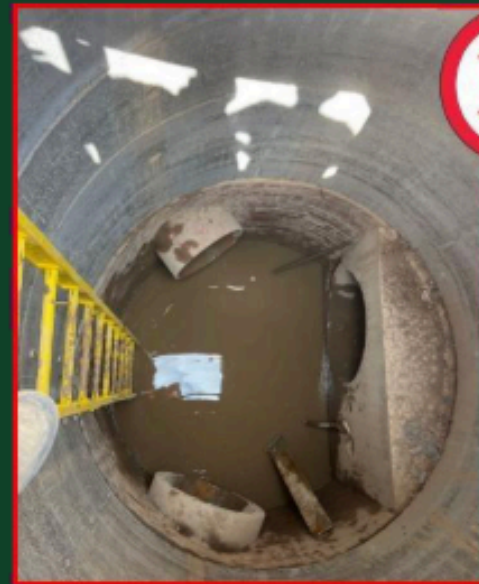


Control Chambers, Catchpits and Brick Built Manholes

- Control chamber sumps to be formed and benched.
- Unit to be fitted as per the design.
- Control chamber access box and penstock to be fitted / moulded into slab.
- Catchpits sump to be installed to the correct height.
- English bond to be used for brick built manholes.



The brickwork is laid to the wrong bond.



Orifice plate and penstock not installed, surface box for penstock not yet installed.

GULLIES Position

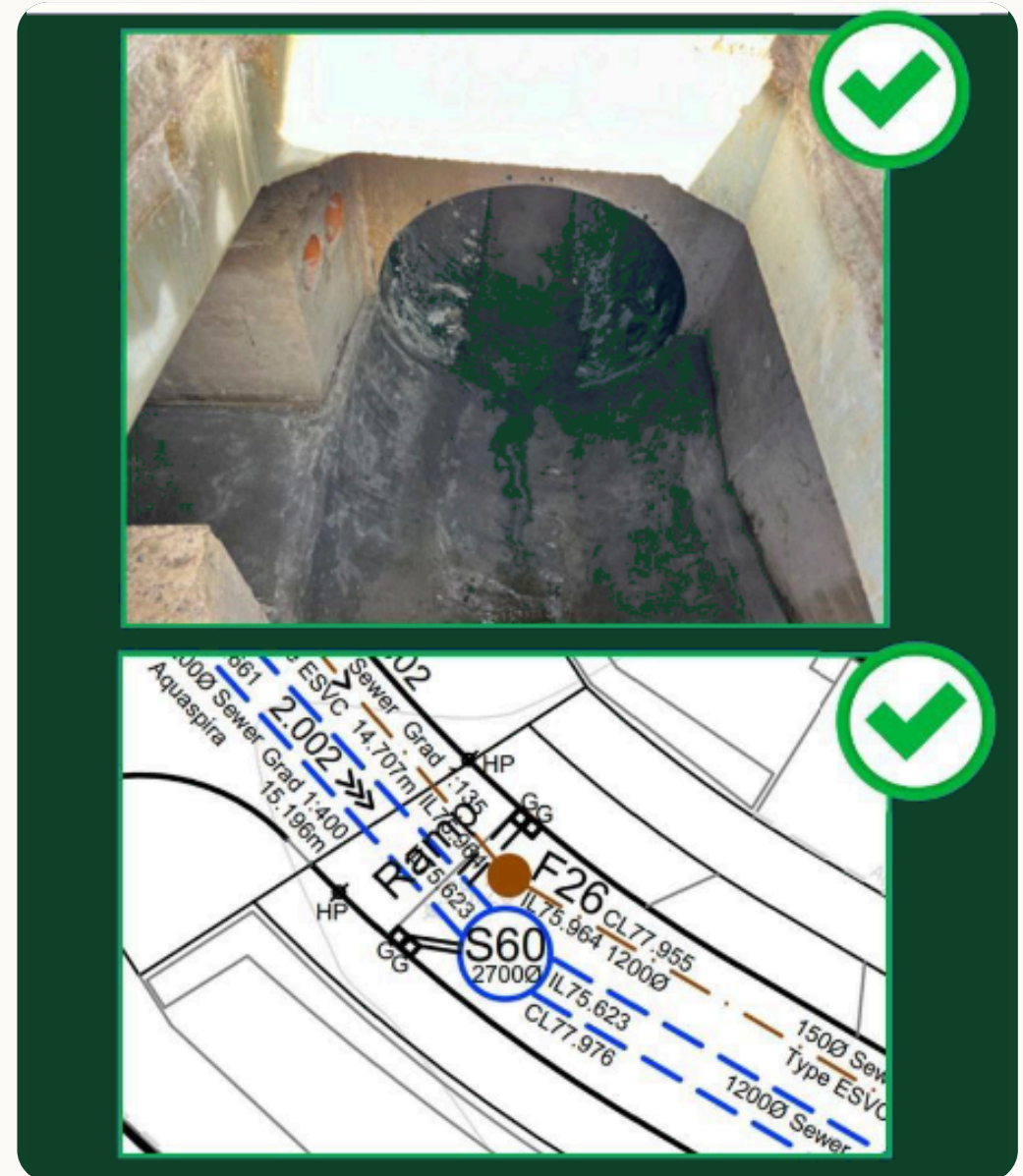
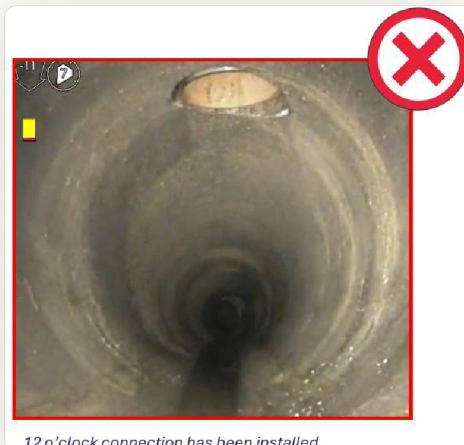
- Gullies are to be positioned as per the design. Paying close attention to ramps & vehicular crossings / pedestrian crossings.
- Pots are to be aligned to the kerb so that there will be a clear minimum 300mm opening.
- Adoptable roads design should always follow the S38 layout.



Gully set too far away from kerb.

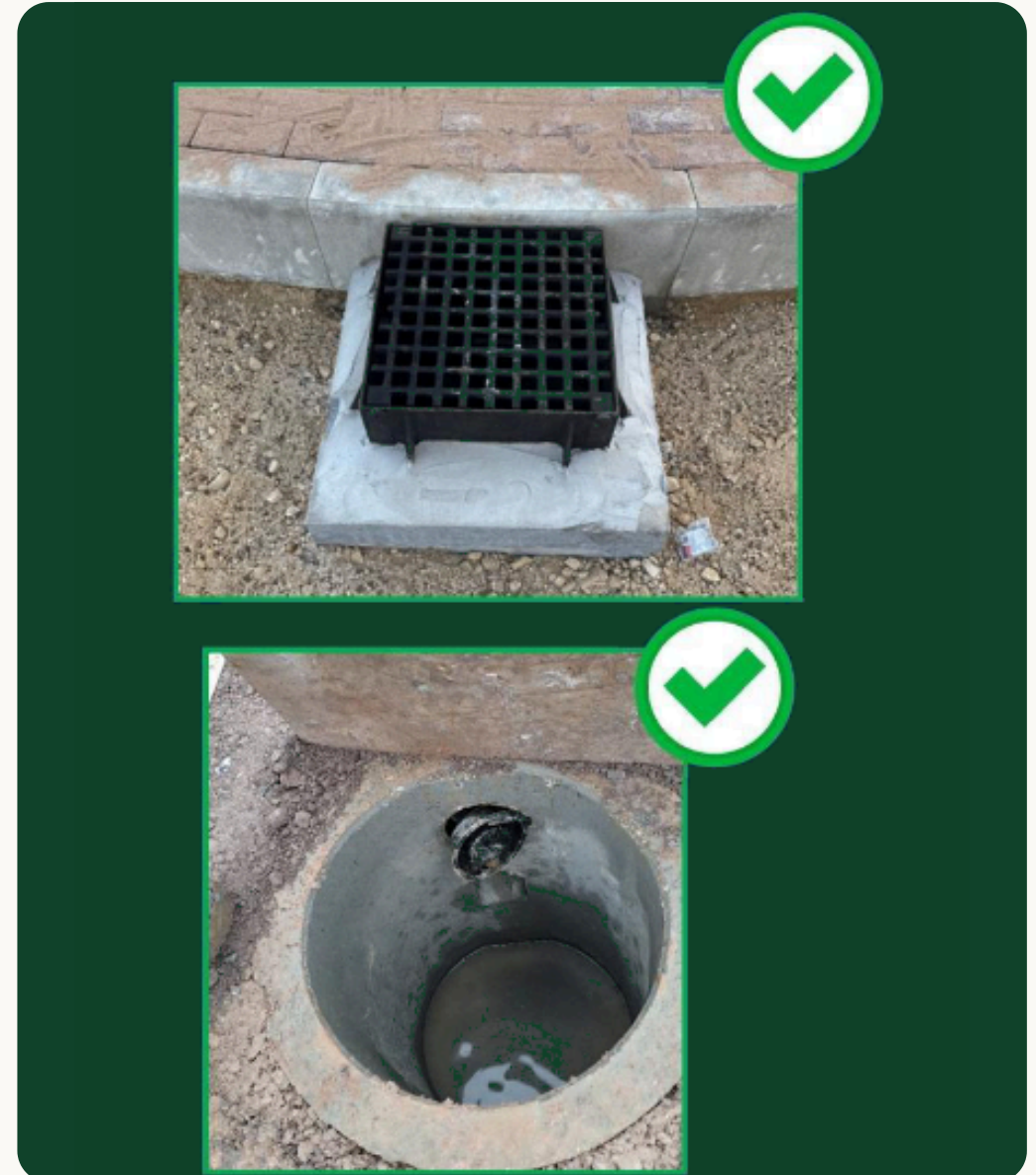


- Gullies will normally have individual connections either into a manhole or a saddle joint on to the mainline.
- Saddle joints to enter the main pipe at an angle no greater than 60 degrees from horizontal.
- Gully pot and connecting pipework will be encased in concrete.
- Compressible fibre board to surround each pipe joint to allow for movement.
- Gullies shall not be branched unless shown on the design.

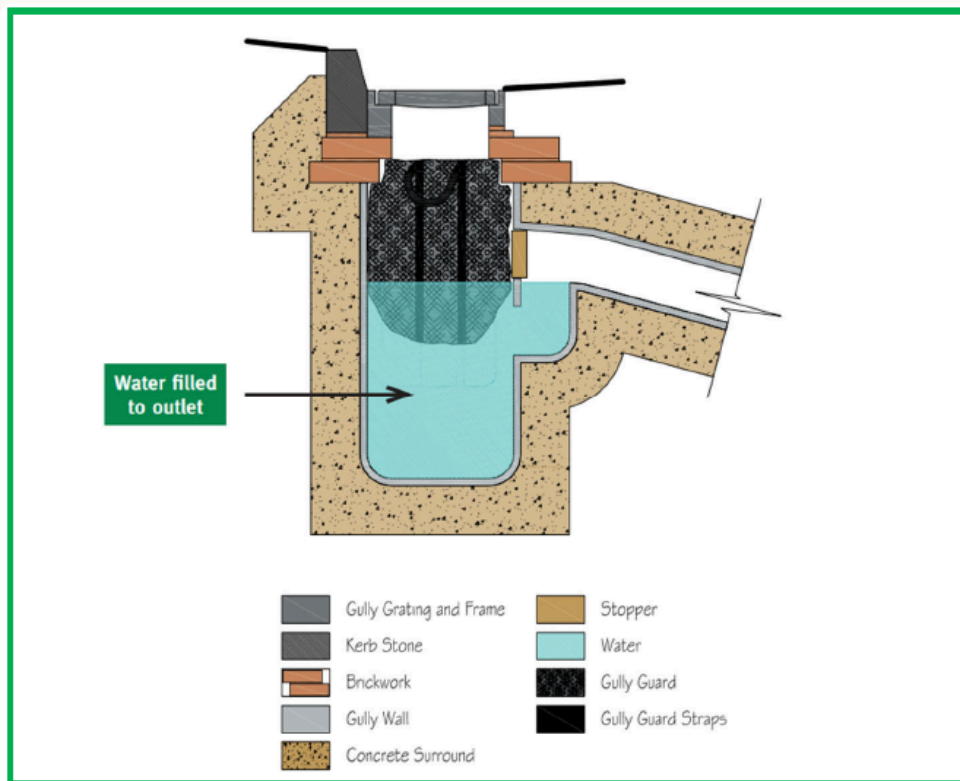


GULLIES Gratings

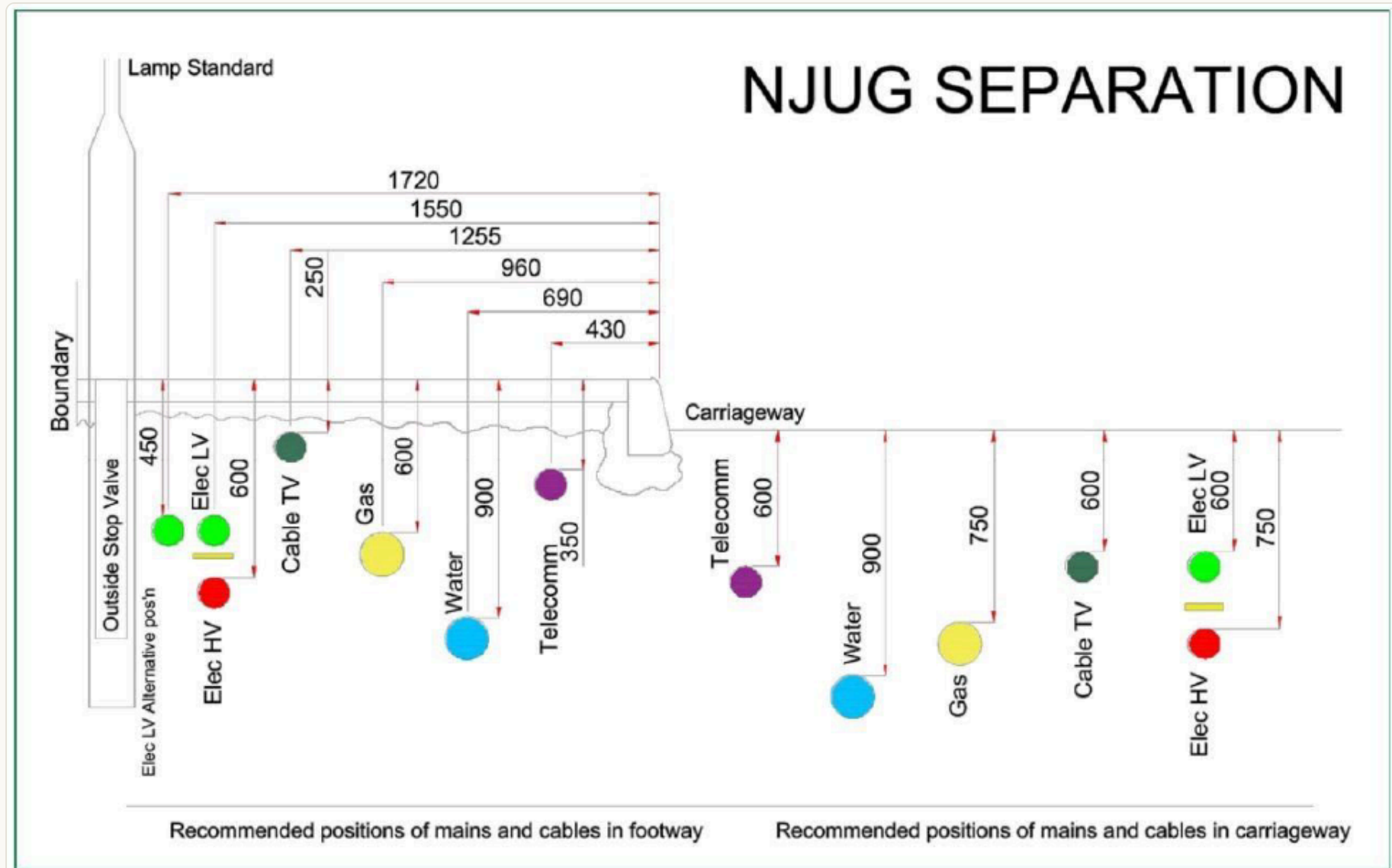
- Gratings are to be raised to 6mm lower than intended surfacing level with a minimum of 2 raising sections or solid class b engineering bricks.
- Risers or bricks are to be suitably bedded and neatly pointed. Risers or brickwork are not to be corbelled more than 30mm per course.
- Gratings in the carriageway will be D400 rated unless otherwise state and free from damage.
- The finished thickness of the mortar bed shall be between 10mm and 25mm.
- Correct type of grates to be used i.e. bike/pedestrian/newt access etc.



- When required by the client & confirmed by your Contracts Manager that it has been priced, silt avoidance measures should be fitted to all gullies and maintained throughout the construction process.

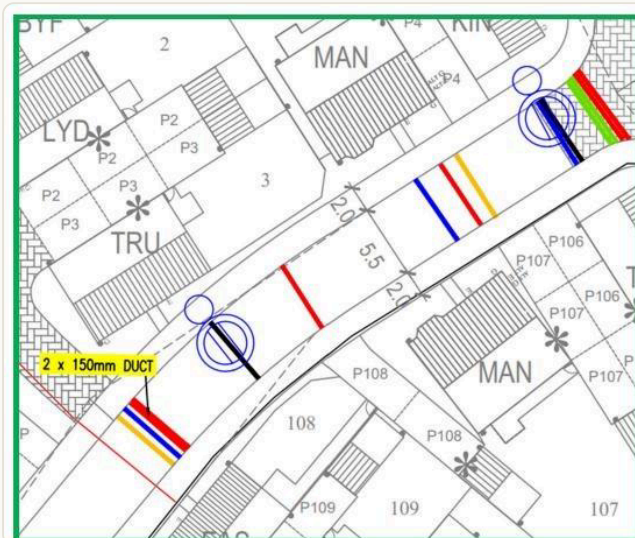


- Service ducting to be installed at the correct depth using the correct duct type, colour and size as specified with minimum clearance between ducts observed, should extend beyond the kerb line.



DUCTING Position

- Combined services drawings should be checked against utility providers own drawings with any discrepancies or clashes with drainage raised to the client and technical department.
- Housing drawings should be checked for point of entry and positions adjusted to suit.
- Consideration to be given to lamppost columns as these are often not included on utility drawings.
- All ducting and services will be surveyed and recorded by the engineer prior to backfill, and a marker (either a brick or duct offcut) cast into the kerb brace.

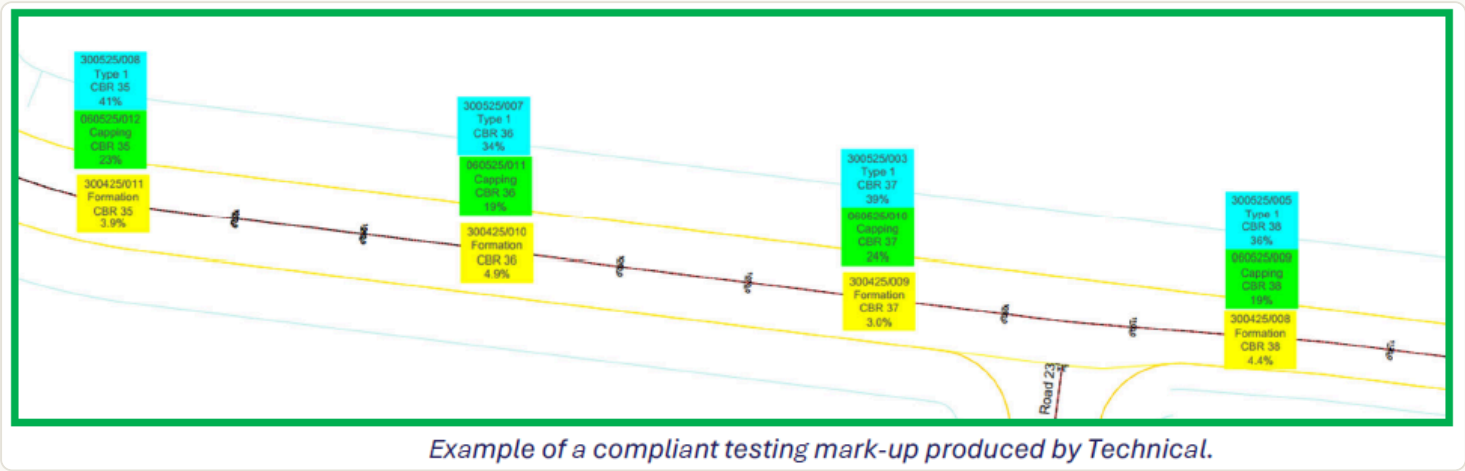


Base and Binder: Formation, Capping and Type 1



- Road will be constructed as per the design determined by results of formation testing and highway authority requirements.
- Both capping and Sub base to be the correct agreed material and will be free of foreign objects and organic material.
- Capping and subbase should extend 500mm beyond the kerbrace.
- Unless otherwise stated in the council spec, the typical required CBR results are as follows: Capping 15%+ and Type 1 30%+ spaced at 30 meter intervals.
- A member of the Construction Management team will ensure all testing is compliant prior to asphalt. Consideration to be given for inclement weather — extreme heat or wet weather can lead to an incorrect CBR value.

Stage	Timing	What Needs To Happen	By Who	Notes
Subbase Testing	Within 5 days of surfacing for Type 1	UKAS-accredited testing company checks subbase & road formation	Site Team	Needs to meet Highway Authority specs



Example of a compliant testing mark-up produced by Technical.

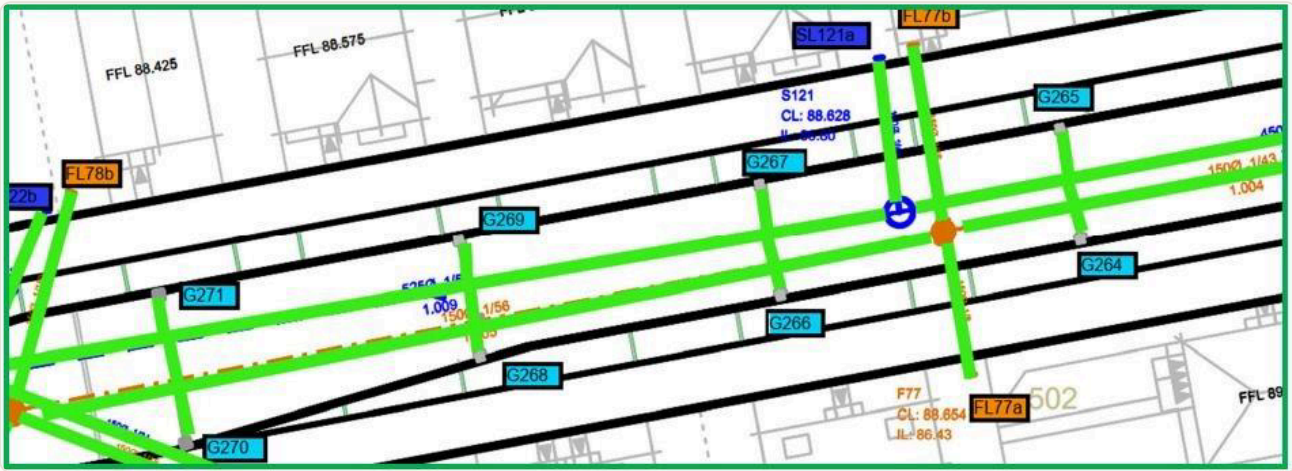
Example of a compliant testing mark-up produced by Technical.

Base and Binder: Drainage CCTV



- Prior to tarmac being laid, a CCTV survey must be carried out on mains, gullies and laterals (if adoptable). This needs to happen with adequate time for the footage to be reviewed by Tech, 5 working days prior as a minimum. This is to allow time for remedial works, if required.
- A member of the Technical team will ensure all CCTV is compliant prior to asphalt.

Stage	Timing	What Needs To Happen	By Who	Notes
Drainage CCTV	As early as possible	Survey mains & gullies (laterals if adoptable), allow time to fix defects	Site Team + Contracts Manager	Must be reviewed by your Quantity Surveyor before any tarmac



Example of a compliant CCTV mark-up produced by Technical.

Base and Binder: Kerbs

- Kerb brace can be installed using either pans or the kerb brace extruder machine. If pans are to be used, the concrete will be vibrated with a poker.
- Kerb brace installed to a suitable width for radii.
- Steps in top surface level should be formed as necessary to accommodate the correct kerbs and a bed of at least 25mm under the kerb.
- If required, sockets are to be cast into the brace for rebar pins to connect to kerb haunching. In some locations a single or double groove in the back side of the brace will be required as a key for the haunching.
- Any duct markers should be cast into position as soon as concrete is laid. Best practice is to install coloured ducting to suit service.



Base and Binder: Dipping

- Engineer to provide information to the foreman with the required dip from the kerb and the camber height for each section of road.
- If there are different road specifications or changes in road level (such as a raised table) then the point at which the road changes is to be clearly marked on the kerb brace on both sides of the road.
- A dip check will be conducted on the subbase prior to tarmac being laid. The tolerance of the sub base is +/- 15mm. Raised iron work and dropped kerbs require temporary tarmac haunching.

Comments	
Road No	Road 11 ch95-160 and TH is ch1 and 2
Camber/Crossfall	Camber
Block Up Used	260mm
Required Dip	260mm

Correct Road Width	5.5m, narrowing to 4.8m
Start	5.5m
Middle	4.780m (TH)
End	4.780m
Issue	No

Road CH	LHS 1/4	LHS 1/2	CL	RHS 1/2	RHS 1/4
100	260	255	260	260	260
110	260	255	260	260	260
120	255	255	250	260	260
130	260	260	250	255	260
140	260	260	260	260	255
150	250	250	240	250	250
160	245	250	245	245	245
1	250	250	250	250	260
2	255	250	240	245	245

- All kerbs are to be installed as the correct type with faces at the correct heights, suitably haunched, with consistent alignment and free from any damage.
- Pedestrian crossings will be installed with 0-6mm kerb faces and tactile paving aligned on either side of the crossing.
- Any street furniture, lampposts or signage is to be installed prior to final surfacing to avoid cutting through wearing course.
- Ironworks protected from trip hazards.

