Foelas scheme
Detailed drawing and terrain review

B06 Denbigh - Foelas | LL16 4TD | Review dated 17 November 2026

Rob Hall emailed the request for quotation on 16 November 2026 at 11:47. Quotation due Friday 27 November 2026. Anticipated start Monday 4 January 2027. Ray forwarded it to Dylan on 17 November asking him to tender.

Reviewed attachment: B06-30G12000-MR-DR-RT-RN_001-003.pdf. Four pages: overview RN-000 and renewal plans RN-001 to RN-003. All marked DP01, dated 10 June 2026, detailed design - for pricing.

Overlander route: under negotiation

Ray confirmed on 17 November that field perimeters are not agreed. No perimeter alignment is assumed in this review. Agree alignment before measuring or ordering against it. The plans specify design rider lengths, not an agreed procurement allowance.

Scope at a glance

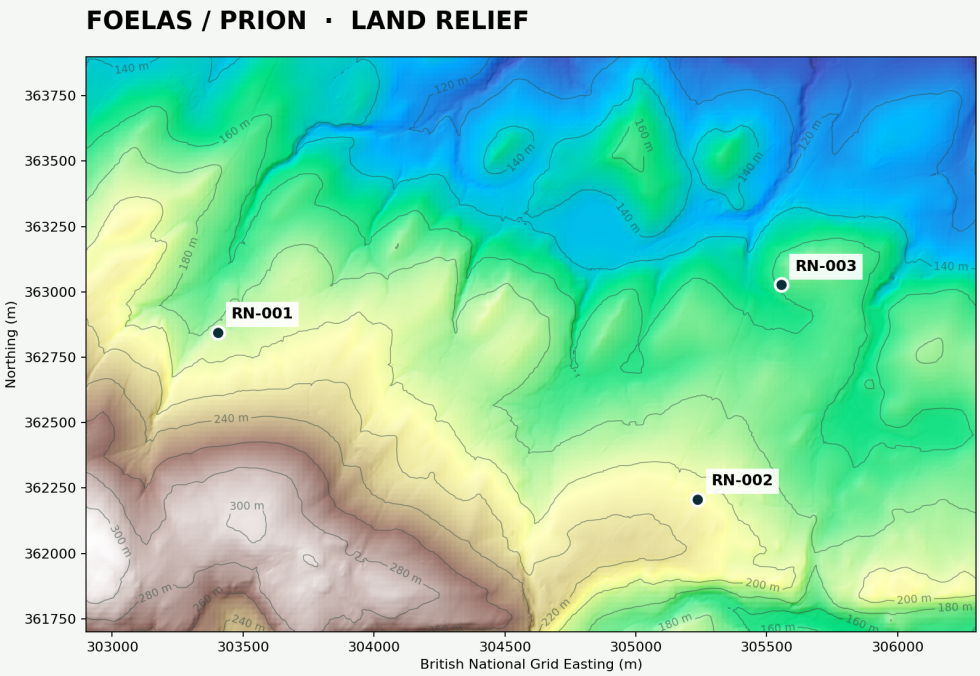
Approximately 1,520 m renewal stated. 63 mm pipeburst, open cut and lift-and-lay; 90 mm Profuse SDR17 pipeburst; separate 32 mm slipline branch CH1520-CH1574 (54 m to clarify). Temporary 63 mm OD rider lengths 986 + 341 + 174 = 1,501 m. Service transfers: quantity to prove; use the investigation register.

Main pricing and programme constraints

Two stream crossings; 132 kV overhead lines; steep pasture and winter access; narrow lanes / property access; protected tree roots and restored ancient woodland; rights of way and Section 58 highway restrictions; repairs and uncertain host materials; missing connection details A-K and part specification.

This is a desk review of pricing drawings and regional terrain, not a surveyed construction design. Drawn requirements, approximate readings and potential alternatives are identified separately. Actual obstructions and method changes must be proved and agreed. No compensation entitlement or Maenan rate is assumed.

Actual land relief



Source: Welsh Government / NRW LiDAR Digital Terrain Model, obtained 17 November 2026 from DataMapWales. Source raster 1 m; displayed at 5 m spacing and 20 m contour intervals. Regional map extent BNG E302900-306300, N361700-363900.

Pins show the printed drawing grid references only: RN-001 E303403 N362845; RN-002 E305236 N362207; RN-003 E305556 N363027. The scheme route has not been georeferenced. These pins are not chainage markers. Regional relief is approximately 98-317 m across this wider extent, not the route elevation range.

The relief indicates ridges and valleys. The design itself identifies steep gradients. Obtain surveyed route coordinates, gradients, pit levels, watercourse bed levels and a longitudinal profile before plant-stability, pull-length or pressure calculations. Ground strength, access bearing capacity, rock and groundwater have not been established.

Public terrain source: https://datamap.gov.wales/maps/lidar-data-download/

Complete review register

35 items below. Source page references refer to the four-page PDF. Repeated general notes apply scheme-wide. Suggested actions and owners are not agreed instructions.

R01 | Scope and measured quantities

Pricing | Whole scheme | PDF page 2

Drawing scope says approximately 1,520 m of 1.5 and 2 inch AC renewal. Chainage runs CH0000–CH1520 across separate locations; a 32 mm branch is labelled CH1520–CH1574. Those extra 54 m need clarification. Chainage numbering does not establish one continuous geographic route.

Action: Obtain measured schedule split by diameter, material, method and surface. Confirm whether 54 m branch is additional to 1,520 m.

R02 | Missing connection drawings and specification

Pricing | Whole scheme | PDF page 2

Only overview RN-000 and renewal plans RN-001/002/003, revision DP01 dated 10 June 2026, are attached. Referred connection drawings CD-001 and CD-002, part specification, utility returns and designer risk register are absent. Drawings are for pricing.

Action: Ask Rob for full tender / construction pack, connection details A–K, specification, surveys, current revision and responsibilities.

R03 | 63 mm bursting across pasture

Method | CH0000–approximately CH0535; CH0565–CH0650; CH0800–towards CH0979 | PDF page 2

RN-001 shows magenta 63 mm 12.5 bar pipeburst sections. Exact change points around streams / tie-ins are read approximately from the plan.

Action: Prove route, host bore, repair materials, bends, pull lengths, receiving pits, access and pulling arrangement before agreeing outputs.

R04 | Two lift-and-lay sections already designed

Method | Near CH0550 and approximately CH0650–CH0800 | PDF page 2

RN-001 labels 63 mm MDPE 12.5 bar open cut (lift & lay) at the stream crossing near CH0550 and the reach from approximately CH0650 to CH0800. These are specified method changes, not assumed extra works.

Action: Measure each red dashed length and include excavation, water management, bedding, AC handling and reinstatement separately.

R05 | Terminal open cut at Garnedd / B4501

Method | Approach to CH0979 | PDF page 2

RN-001 labels 63 mm open cut at the terminal connection / washout near Garnedd Isa and Llys Awel. Clusters of stop taps and repairs are shown nearby.

Action: Confirm final burst-to-open-cut boundary, traffic management, connection depth and access to premises.

R06 | 32 mm slipline branch

Method | CH1520–CH1574 on RN-001 | PDF page 2

Separate orange branch near Chapel Peniel / Garnedd is labelled 32 mm MDPE 12.5 bar installed via slipline. Chainage labels indicate 54 m.

Action: Confirm host internal diameter, hydraulic acceptance, end details, full length, service transfers and insertion access; do not include as 63 mm bursting.

R07 | Prion highway crossing by open cut

Method | CH0979–CH1015; Maes-y-groes | PDF page 3

RN-002 shows 63 mm MDPE 12.5 bar open cut from existing sluice-valve connection E to fire-hydrant detail F, crossing the road near Prion properties. Chainage difference is 36 m; no detailed road-crossing design supplied.

Action: Measure carriageway / verge / private land quantities, utility conflicts, reinstatement category, traffic control and tie-in windows.

R08 | 90 mm bursting section

Method | CH1015–CH1353 | PDF page 4

RN-003 labels 90 mm Profuse SDR17 installed by pipebursting. Chainage difference 338 m. Existing labels include 2 inch AC; 3 inch uPVC tie-in G and 2 inch uPVC tie-in I require details.

Action: Assess upsizing effort and host condition, tree restrictions and pit positions. Confirm pipe and fitting specification and separate 90 mm rate.

R09 | 63 mm bursting east spur

Method | CH1353–CH1520 | PDF page 4

RN-003 shows a separate 63 mm MDPE 12.5 bar burst reach, chainage difference 167 m, between existing sluice-valve detail J and end washout K.

Action: Confirm access, host material, service connections, trial pits and termination positions; treat as its own workfront.

R10 | Stream crossing near CH0550

Obstruction | Approximately CH0550 | PDF page 2

Small stream crossing, red open-cut lift-and-lay and an existing washout to be abandoned are shown on RN-001.

Action: Confirm crossing section, bank access, working width, water control, consent and approved abandonment. Bursting cannot simply be assumed through this feature.

R11 | Stream crossing near CH0650

Obstruction | Approximately CH0650 | PDF page 2

RN-001 calls for a small stream crossing and minimum 1 m cover under watercourse bed; connection detail C is referenced nearby.

Action: Survey bed and existing main levels. Obtain crossing design and consent, prove depth and plan bank reinstatement.

R12 | 8 m watercourse restriction

Consent | Watercourse reaches on RN-001 | PDF page 2

Drawing says no work within 8 m of watercourse without consent from local authority. This is a drawing requirement; actual regulator and permit conditions still need confirmation.

Action: Obtain written consent / regulator confirmation before pits, access, discharge or bank works. No chlorinated water or drilling fluid to enter watercourses / drains.

R13 | 132 kV overhead electricity

Obstruction | RN-001 around central pasture / stream reaches | PDF page 2

Two explicit 132 kV caution callouts and hazard symbols are shown. Exact line alignment, conductor height and working envelope are not given.

Action: Get network-owner site assessment and agreed exclusion / crossing arrangements under GS6. Verify boom, lifting, pipe-string and delivery envelopes before fixing pits or access.

R14 | Steep gradients and wet pasture

Terrain | Pasture reaches; scheme-wide hazard notes | PDF page 2

Design explicitly identifies steep gradients and pasture. Winter access, traction, rutting, pit stability and long pipe-string movement may reduce achievable production. Ground strength and actual slope are unverified.

Action: Walk and survey route, agree haul routes / mats / recovery arrangements, machine suitability and pit support. Price access and restoration from evidence.

R15 | Gates, fences and field boundaries

Access | RN-001 labelled access gates | PDF page 2

Multiple access gates are marked; no clear gate widths, load limits, landowner permissions or compound is specified. No hedgerows may be removed without advance designer guidance.

Action: Record every gate width, approach, livestock arrangement, fencing and reinstatement. Install field markers either side of hedge / field boundaries as specified.

R16 | Public rights of way

Consent | RN-001 and RN-003 | PDF page 2

Rights of way are mapped. Drawing requires a closure if access cannot be maintained and a minimum five-week notice period.

Action: Confirm safe maintained access or approved closure dates now. Five weeks before 4 January is 30 November; that is only a theoretical latest notice date, with no holiday or processing allowance.

R17 | Highway restriction to March 2030

Consent | RN-001 start connection / CH0000 area | PDF page 2

Drawing annotates a proposed Section 58 restriction from April 2026 to March 2030 at the highway. Actual current extent and permission are unverified.

Action: Obtain highway authority confirmation of restriction and permitted works, licences / notices and required reinstatement before pricing or mobilisation.

R18 | Highway restriction until January 2027

Consent | RN-003 near CH1150 | PDF page 4

Drawing states Section 58 currently on highway until January 2027, without an exact day. Planned 4 January start could still fall within restriction.

Action: Confirm exact expiry, extents and permission; do not assume it ends on 1 January.

R19 | Large trees / root protection

Obstruction | RN-003 around CH1100–CH1150 | PDF page 4

Explicit instruction: large trees in vicinity, no excavation in RPA. Root protection extent is not dimensioned.

Action: Obtain arboricultural RPA plan and agree pit / access positions. Open cut is not an automatic fallback within protected roots.

R20 | Restored ancient woodland

Environment | RN-003 approximately CH1150–CH1330 | PDF page 4

Restored ancient woodland is annotated beside the 90 mm corridor. Limits and working width need confirmation.

Action: Confirm ecological / arboricultural constraints, access, pipe strings, no-dig zones and any agreed methodology before disturbing ground.

R21 | Repeated repairs may interrupt bursts

Obstruction | RN-001 and RN-003 repair symbols / burst records | PDF page 2

Repair symbols and historical burst references are shown, including a cluster near the Garnedd terminal. They indicate history, not proof of an impassable current repair.

Action: Locate with records / tracing and trial pits. Allow agreed process for intermediate excavations or short open-cut replacements if fittings, bends or repairs prevent passage. Record evidence before changing method.

R22 | Services and unidentified stop taps

Connections | Plotted ST / building investigations; quantity unproven | PDF pages 2-4

General-note quantity disregarded. Trace plotted STs and buildings; agree service size and method as appropriate. Use the ST and building register to investigate the actual supply and transfer scope.

Action: Prove each service, supply grouping, property and isolation. Confirm service lengths, surfaces, renewal limits, customer liaison and provisional quantities.

R23 | Existing utilities and comms pipe

Obstruction | All excavations; RN-003 Bryn Derwen reach | PDF page 4

Utility information is referenced separately but absent. RN-003 marks location of an existing comms pipe as confirmed on site walkover; depth / clearance still unspecified.

Action: Obtain statutory plans, trace and trial-hole conflicts. Confirm what comms pipe denotes and protect / support existing apparatus.

R24 | Narrow lanes and property access

Access | Prion, Garnedd and RN-003 lanes | PDF page 2

Narrow-lane and highway hazards are listed. Properties, drives, junctions and cattle grids occur in map context; affected crossings must be checked rather than all treated as confirmed conflicts.

Action: Survey delivery / turning room, load limits, road widths and each affected access. Agree spoil removal and staged reinstatement with residents.

R25 | Temporary overlander quantity

Resource | 986 m + 341 m + 174 m | PDF page 2

Plans specify 63 mm OD temporary overland pipe: 986 m on RN-001; 341 m and 174 m on RN-003. Total specified rider = 1,501 m, not 90 mm. These are design route lengths, not coil purchasing quantities.

Action: Confirm route, coil lengths, couplers, connections, valves, supports, crossings, testing and commissioning. Order from measured layout, allowing actual connections / wastage.

R26 | Rider crossings and high-point air valves

Method | Road junctions / local high points | PDF page 2

Drawings require rider made safe for vehicular access at junctions. Air valves at local high points; 341 m rider note also says every 500 m. No pressure / hydraulic design for temporary supply is supplied. Overlander alignment is under negotiation, confirmed by Ray on 17 November 2026. Field perimeters are not agreed.

Action: Agree overlander alignment before route measurement / ordering. No field-perimeter assumption. Then agree protected vehicle crossings, survey high points and confirm valve / restraint design.

R27 | Pressure and commissioning

Commissioning | Whole scheme | PDF page 2

General note states working pressure 10 bar and test pressure 15 bar at lowest point. New 63 / 32 mm pipe is labelled 12.5 bar; 90 mm is Profuse SDR17. No full testing / disinfection plan attached.

Action: Have designer / DCWW confirm pipe ratings, pressure zoning and approved test method against elevations and temperature. Agree test sections, water, disposal, chlorination, sampling and release before cutovers.

R28 | Isolation and permit to work

Commissioning | Every live-main interface | PDF page 2

Drawing requires COI / proven isolation under HSP119 and DCWW permit to work under HSP124. Connection details A–K are references, not fitting schedules.

Action: Confirm operations attendance, isolation prove, customers affected, shutdown windows and who supplies each connection fitting / valve / hydrant.

R29 | AC and uncertain host materials

Method | Existing AC renewal / all unproved hosts | PDF page 2

Existing main labels include AC, CI and uPVC. Drawing warns material records can be wrong and AC / pitch fibre must be anticipated in RAMS.

Action: Verify each host material and bore; obtain agreed AC removal / bursting approach, competent labour and waste arrangements. Do not assume every existing labelled pipe is in scope.

R30 | Environmental and reinstatement limits

Environment | Whole scheme | PDF page 2

No hedge removal without designer guidance; avoid tree / hedge disturbance during 1 March–31 August. Tree works per NJUG note and any TPO agreement. All affected surfaces reinstated to match; redundant apparatus retained under DCWW ownership / liability as specified.

Action: Confirm environmental survey, stock / topsoil handling, fencing, restoration standard and responsibilities. Legend entries alone do not prove badgers, mine shafts, contamination, archaeology, newts or SSSI at the route.

R31 | Potential alternatives require approval

Method | Any obstructed or inaccessible reach | PDF page 2

Possible responses include shorter bursts, extra pits, local open cut, reroute or specialist trenchless crossing. None is confirmed as a new design instruction. General HDD notes in the pack do not specify HDD for this scheme.

Action: Evidence obstruction, compare approved options and obtain written instruction / commercial agreement before a method change; respect root / watercourse constraints.

R32 | Terrain evidence and survey gap

Terrain | Foelas / Prion regional view | PDF page 2

Actual Welsh Government / NRW LiDAR DTM obtained from DataMapWales and displayed at 5 m spacing with 20 m contours. Drawing grid references are shown as reference pins only. The plans have no surveyed long section or georeferenced route.

Action: Use relief for reconnaissance. Obtain surveyed route, chainage coordinates, slopes, bed / main levels and pit levels before pull, stability or pressure calculations.

R33 | Programme, resources and welfare

Resource | Before mobilisation | PDF page 2

Rob requests quotation by 27 November 2026, anticipated start 4 January 2027. No completion date, agreed outputs, compound, welfare, plant schedule or supply split given.

Action: Confirm programme and land access, compound / welfare, pipe deliveries, plant and crew availability, spoil disposal, stone, road permits and commissioning lead times.

R34 | Commercial basis and standing time

Pricing | Tender and site record | PDF page 2

No Foelas rates, quantities schedule or agreed compensation entitlement attached. Maenan rates and output assumptions cannot automatically be transferred.

Action: Separate burst diameters, lift & lay, highway open cut, slipline, services, connections, rider, access, consents and commissioning. Track event, instruction, affected men / plant, hours, costs, mitigation and notice reference; entitlement remains for assessment.

R35 | Connection and asset schedule

Connections | A–K across RN-001 to RN-003 | PDF page 2

A: existing 90 mm Profuse; B: air valves (two shown on RN-001); C: connection near CH0650; D: end washout / inline valve; E: existing sluice valve; F: fire hydrant; G: existing 3 inch uPVC; H: fire hydrant and air valve; I: existing 2 inch uPVC; J: existing sluice valve; K: end washout / inline valve. Exact fitting counts require CD drawings. All flanges PN16; flexible fittings cast in concrete require specified approved wrapping.

Action: Obtain CD-001 / CD-002 and build checked fitting / gasket / bolt / marker schedule. Confirm abandonment and operational indicator-post requirements.