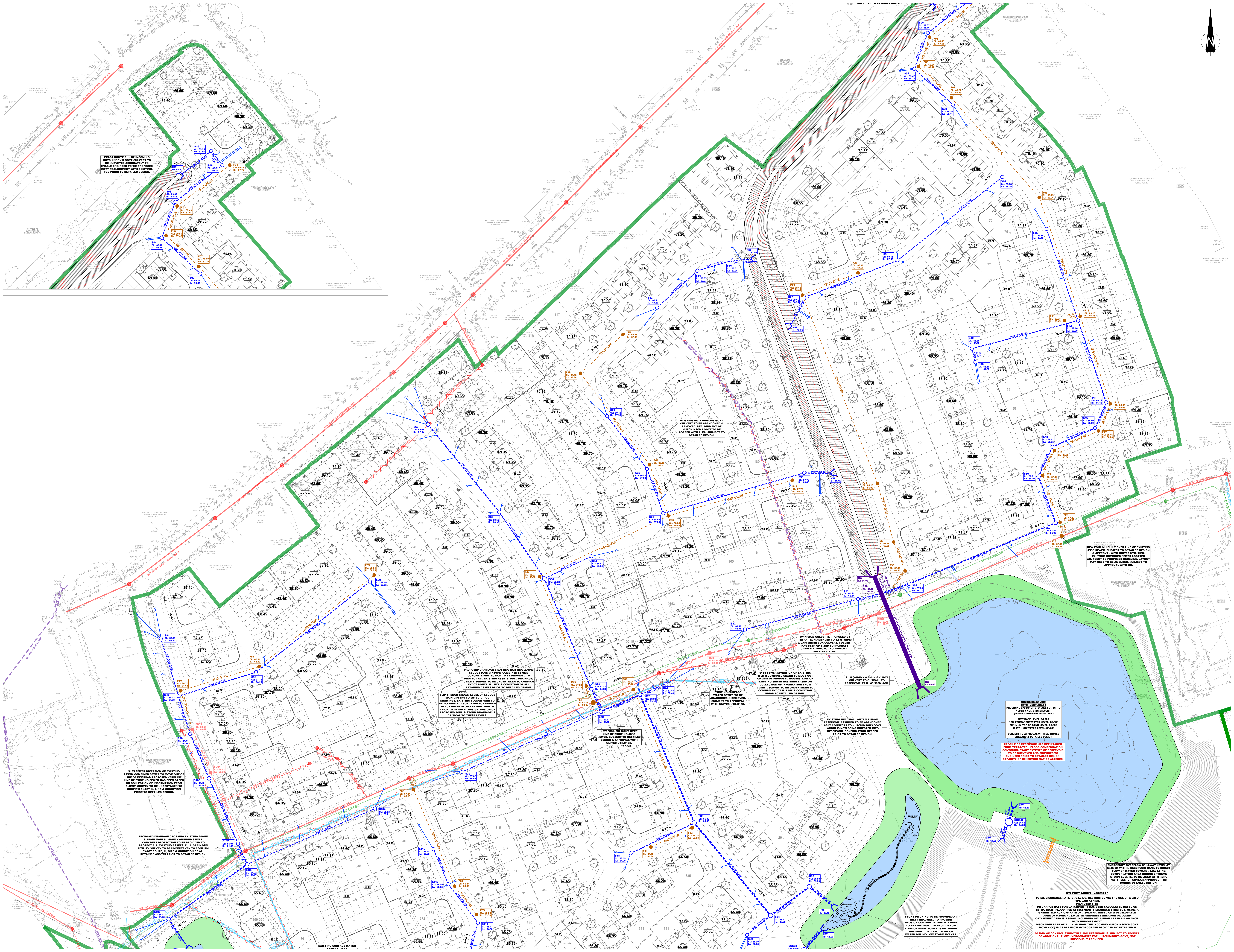

TBC PRIOR TO DETAILED DESIGN.

EXACT ROUTE & IL OF INCOMING HUTCHINSON'S GOYT CULVERT TO BE SURVEYED ACCURATELY TO ENABLE ENGINEER TO TIE PROPOSED GOYT REALIGNMENT WITH EXISTING. TBC PRIOR TO DETAILED DESIGN.

EXISTING HUTCHINSONS GOYT CULVERT TO BE ABANDONED & REMOVED. REALIGNMENT OF HUTCHINSONS GOYT TO BE AGREED WITH LLFA. SUBJECT TO DETAILED DESIGN.

NEW FOUL MH BUILT OVER LINE OF EXISTING 450Ø SEWER. SUBJECT TO DETAILED DESIGN & APPROVAL WITH UNITED UTILITIES. EXISTING COMBINED SEWER LOCATED ADJACENT TO PROPOSED KERBLINE, LAYOUT MAY NEED TO BE AMENDED. SUBJECT TO APPROVAL WITH UU.

TWIN 600Ø CULVERTS PROPOSED BY TETRA-TECH AMENDED TO 1.8M (WIDE) X 0.6M (HIGH) BOX CULVERT. CULVERT HAS BEEN UP-SIZED TO INCREASE CAPACITY. SUBJECT TO APPROVAL WITH EA & LLFA.

2.1M (WIDE) X 0.6M (HIGH) BOX CULVERT TO OUTFALL TO RESERVOIR AT IL: 65.500M AOD.

S185 SEWER DIVERSION OF EXISTING 450MM COMBINED SEWER TO MOVE OUT OF LINE OF PROPOSED HOUSES. LINE OF EXISTING SEWER HAS BEEN BASED ON COLLECTION OF INFORMATION FROM CLIENT. SURVEY TO BE UNDERTAKEN TO CONFIRM EXACT IL, LINE & CONDITION PRIOR TO DETAILED DESIGN.

EXISTING SURFACE WATER SEWER TO BE ABANDONED & REMOVED. SUBJECT TO APPROVAL WITH UNITED UTILITIES.

EXISTING HEADWALL OUTFALL FROM RESERVOIR ASSUMED TO BE ABANDONED AS IT CONNECTS TO HUTCHINSONS GOYT WHICH IS NOW BEING DIRECTED INTO RESERVOIR. CONFIRMATION NEEDED PRIOR TO DETAILED DESIGN.

PROPOSED DRAINAGE CROSSING EXISTING 200MM SLUDGE MAIN & 450MM COMBINED SEWER. CONCRETE PROTECTION TO BE PROVIDED TO PROTECT ALL EXISTING ASSETS. FULL DRAINAGE/ UTILITY SURVEY TO BE UNDERTAKEN TO CONFIRM EXACT ROUTE, IL, SIZE & CONDITION OF ALL RETAINED ASSETS PRIOR TO DETAILED DESIGN.

SLIP TRENCH CROWN LEVEL OF SLUDGE MAIN DIFFERS TO 'AS-BUILT' UU DRAWINGS. EXISTING SLUDGE MAIN TO BE ACCURATELY SURVEYED TO CONFIRM EXACT DEPTH ALONG ENTIRE LENGTH PRIOR TO DETAILED DESIGN. DESIGN OF PROPOSED FOUL & STORM DRAINAGE IS CRITICAL TO THESE LEVELS.

NEW FOUL MH BUILT OVER LINE OF EXISTING 450Ø SEWER. SUBJECT TO DETAILED DESIGN & APPROVAL WITH UNITED UTILITIES.

S185 SEWER DIVERSION OF EXISTING 225MM COMBINED SEWER TO MOVE OUT OF LINE OF EXISTING/ PROPOSED KERBLINE. LINE OF EXISTING SEWER HAS BEEN BASED ON COLLECTION OF INFORMATION FROM CLIENT. SURVEY TO BE UNDERTAKEN TO CONFIRM EXACT IL, LINE & CONDITION PRIOR TO DETAILED DESIGN.

PROPOSED DRAINAGE CROSSING EXISTING 200MM SLUDGE MAIN & 450MM COMBINED SEWER. CONCRETE PROTECTION TO BE PROVIDED TO PROTECT ALL EXISTING ASSETS. FULL DRAINAGE/ UTILITY SURVEY TO BE UNDERTAKEN TO CONFIRM EXACT ROUTE, IL, SIZE & CONDITION OF ALL RETAINED ASSETS PRIOR TO DETAILED DESIGN.

EXISTING SURFACE WATER SEWERS TO BE

ONLINE RESERVOIR
CATCHMENT AREA 1
PROVIDING 2700M³ OF STORAGE FOR UP TO 100YR + 45% STORM EVENT
(ABOVE EXISTING PERM. WATER LEVEL)

NEW BASE LEVEL: 64.000
NEW PERMANENT WATER LEVEL: 65.500
MINIMUM TOP OF BANK LEVEL: 66.000
100YR + CC WATER LEVEL: 65.783

SUBJECT TO APPROVAL WITH EA, HOMES ENGLAND & DETAILED DESIGN

PROFILE OF RESERVOIR HAS BEEN TAKEN FROM TETRA-TECH FLOOD COMPENSATION CONTOURS. EXACT EXTENTS OF RESERVOIR TO BE SURVEYED AND PROVIDED TO ENGINEER PRIOR TO DETAILED DESIGN. CAPACITY OF RESERVOIR MAY BE ALTERED.

EMERGENCY OVERFLOW SPILLWAY LEVEL AT 65.900M WITHIN RESERVOIR BANK TO DIRECT FLOW OF WATER TOWARDS LOW LYING COMPENSATION AREA DURING EXTREME STORM EVENTS. TO BE LINED WITH RENO MATTRESS (OR SIMILAR APPROVED) TBC DURING DETAILED DESIGN.

STONE PITCHING TO BE PROVIDED AT INLET HEADWALL TO PROVIDE EROSION CONTROL, STONE PITCHING TO BE CONTINUED TO PROVIDE LOW FLOW CHANNEL TOWARDS OUTGOING HEADWALL TO DIRECT FLOW OF WATER DURING LOW STORM EVENTS.

SW Flow Control Chamber

TOTAL DISCHARGE RATE IS 753.2 L/S, RESTRICTED VIA THE USE OF A 525Ø PIPE LAID AT 1:78.

PROPOSED SITE

DISCHARGE RATE FOR CATCHMENT 1 HAS BEEN CALCULATED BASED ON TETRA-TECH - FLOOD RISK ASSESSMENT & DRAINAGE STRATEGY. USING A GREENFIELD RUN-OFF RATE OF 7.55L/S/HA, BASED ON A DEVELOPABLE AREA OF 5.15HA = 38.9 L/S. IMPERMEABLE AREA FOR INCLUDED CATCHMENT AREA IS 2.806HA INCLUDING 10% URBAN CREEP ALLOWANCE.

HUTCHINSON'S GOYT

DISCHARGE RATE OF 714.3 L/S FROM THE INCOMING HUTCHINSON'S GOYT (100YR + CC) IS AS PER FLOW HYDROGRAPH PROVIDED BY TETRA-TECH.

DESIGN OF CONTROL STRUCTURE AND RESERVOIR IS SUBJECT TO RECEIPT OF ADDITIONAL FLOW HYDROGRAPH'S FOR HUTCHINSON'S GOYT, NOT PREVIOUSLY PROVIDED.

The Contractor is to check and verify in conjunction with the Architects details all setting out points, building and site dimensions, levels and sewer invert levels at connection points and ensure that they are fully conversant with the contents and requirements of the site investigation report before work starts. The Contractor is to comply in all respects with current building legislation, British Standard Specifications, Building Regulations etc.,whether or not specifically stated on this drawing.

This drawing is not intended to show details of ground conditions or ground contaminants. Each area of ground relied upon to support any structure depicted (including drainage) must be investigated by the Contractor any areas of formation for said structures which do not accord with the anticipated conditions as described in the site investigation report are to be immediately notified to the Engineer, where applicable. Any suspect fluid ground or ground contaminants on or within the ground should be further investigated by a suitable expert. Any earthworks shown indicate typical slopes for guidance only and should be investigated further by a suitable geotechnical expert.

Where existing trees are shown to be retained they should be subject to a full Arboricultural inspection for safety. All trees are to be planted so as to ensure they are a minimum of 5 metres from buildings and 3 metres from drainage and services, where applicable. A foundation is to be provided to accommodate the proposed tree planting, where applicable.

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GENERAL NOTES

- This drawing is to be read in conjunction with relevant architectural and engineering drawings.
- Levels indicated in blocks are Finished floor levels and are 150mm above adjacent finished ground levels unless otherwise shown.
- Levels of the existing road at the point of tie-in with proposed site road must be checked prior to commencement of works.
- Any discrepancies between the details shown and actual on site conditions to be reported immediately to the engineer prior to commencement of works.
- The Contractor is to check and verify in conjunction with the Architects details all setting out points, building and site dimensions, levels and sewer invert levels at connection points and ensure that they are fully conversant with the contents and requirements of the site investigation report before work starts. The Contractor is to comply in all respects with current building legislation, British Standard Specifications, Building Regulations etc.,whether or not specifically stated on this drawing.
- This drawing is not intended to show details of ground conditions or ground contaminants. Each area of ground relied upon to support any structure depicted (including drainage) must be investigated by the Contractor any areas of formation for said structures which do not accord with the anticipated conditions as described in the site investigation report are to be immediately notified to the Engineer, where applicable. Any suspect fluid ground or ground contaminants on or within the ground should be further investigated by a suitable expert. Any earthworks shown indicate typical slopes for guidance only and should be investigated further by a suitable geotechnical expert.
- Where existing trees are shown to be retained they should be subject to a full Arboricultural inspection for safety. All trees are to be planted so as to ensure they are a minimum of 5 metres from buildings and 3 metres from drainage and services, where applicable. A foundation is to be provided to accommodate the proposed tree planting, where applicable.

ADOPTABLE ROADS AND SEWERS

- Roads, footways and parking bays which form part of the highway to be adopted under Section 38 of the Highways Act 1980 shall comply with the requirements of the Adopting Authority.
- Sewers to be adopted under Section 104 of the Water Industries Act 1991 shall comply with the Water Authorities Association "Design & Construction Guidance For Foul & Surface Water Sewers Under Code For Adoption - 2020" with any amendments specified by the Adopting Water Authority.
- All pipes to be used in adoptable sewerage shall be either clayware to BS EN 295 or concrete to BS EN 1916 and BS 5911: Part 1 with Class S bedding unless otherwise stated. With approval of the Adopting Authority solid wall concentric external rib reinforced uPVC pipes complying with the relevant provisions of BS EN 13476 may be used.
- Where cover to a pipe is more than 1200mm under adoptable carriageway the trench shall be filled to formation of the carriageway with well compacted DTp Type 1 material.
- Where cover to a pipe is less than 1200mm under adoptable carriageway it shall be provided with concrete protection in accordance with the specification of the adopting authority and back filled to formation of the carriageway with well compacted DTp Type 1 material. Where concrete bed and surround is specified flexibility of joints is to be maintained by using compressible bitumen impregnated fibreboard at each pipe joint.
- All existing drainage invert levels, diameters and locations are to be checked by the Contractor prior to the commencement of any proposed drainage work. Any difference between actual and drawn details is to be reported to the Engineer immediately.
- Positions of existing services/statutory undertakers apparatus adjacent to or crossing proposed sewers is to be checked by the Contractor prior to starting work.
- Trench backfill to be stone backfill, excavated material is not accepted & trenches to be backfilled in 250mm layers.

Drainage Strategy Legend

Storm Water Network
Foul Water Network
Combined Water S185 Sewer Diversion
Storm Water Carlow Tank
Hutchinsons Goyt Realignment Culvert
Existing Public Combined Sewer
Existing Storm Water Drainage
Existing Culverted Water Course
Existing Public Sludge Main
Existing Sewer To Be Abandoned
Proposed Development Platform Contours (Provided By Tetra Tech)
Development Boundary

EXISTING SEWERS/ UTILITIES HAVE BEEN SHOWN BASED ON PROVIDED SEWER RECORDS, CCTV, DRAINAGE SURVEYS & INTERPOLATION BETWEEN ALL INFORMATION AVAILABLE. EXACT LOCATION, SIZE, IL & CL OF EXISTING ASSETS NEED TO BE CONFIRMED PRIOR TO DETAILED DESIGN.

Rev.	Description	Date	By
E	FFL to plots 333-334 & 353-367 amended.	23/11/2023	DA
D	Reservoir note amended to suit client request.	17/11/2023	LJ
C	Drainage amended to remove northern suds features & catchment areas revised to go into reservoir & to suit latest layout as per client request.	25/10/2023	LJ
B	Hutchinson's Goyt banks amended to 1:3 to suit client request.	10/02/2023	LJ
A	Drainage strategy plan amended to suit latest layout changes & to suit Tetra-Tech information provided.	20/01/2023	LJ
-	First Issue	12/12/2022	LJ

Drawing Status

PLANNING

Please note while these drawings may be used for tender purposes, drawings are subject to the United Utilities & Highways approval as part of ongoing consultations and design checks. Amendments may therefore be requested.

Client

MORRIS

Project

Papermills, Bury,
Lancashire

Title

Drainage Strategy -
Layout Plan - Sheet 1 of 2

BANNERS GATE

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Scale	1:500 @ A0	Drawn	LJ
Date	December 2022	Checked	
File	22166 / dwgs / civils / current	Drawing	22166 / PL111 - E