

Project Title	New Ross Grain Store, John Street, New Ross, Co Wexford
Document Title	Drainage planning report
Client	Wexford County Council
File No.	J08_DRPL_001
Author	Peter Brunner
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Revision	P2

INTRODUCTION:

This report outlines the proposals for drainage matters and potable water supply associated with the proposed extension and refurbishment of the Grainstore at John Street, New Ross, Co Wexford.

This report should be read in conjunction with all other drawings and documents as part of this submission.

PROJECT SCALE:

The development of the existing grain store building will consist of remodeling the floor plates to exhibition and office space as well as extension to the west for Café/Restaurant and associated kitchen and service areas.

LOCATION:

The proposed development site is located between John Street and Bridge street in New Ross.



Fig 1 - Site location map. Subject site in New Ross marked with red X.

PUBLIC DRAINAGE SUPPLY:

The site is serviced by a surface water sewer which drains to the River Barrow to the west and by foul water sewer which underlies both John Street and Bridge Street to the south. It is proposed to connect to both these public drainage systems.

STORM WATER DRAINAGE:

Wexford County Council (WCC) county development plan require all urban developments of significance to incorporate and provide the full suite of 'sustainable urban drainage systems' (SUDS) measures in order to minimise the extent of hard surfacing, culverting and surface water run-off. This is good practice and we have endeavoured to include as many systems as practicable for this development.

The systems we propose at different stages are as follows:

1. Green roofs to be incorporated over proposed extension
2. Plaza hardstandings to have permeable/landscaped finishes
3. Discharge to watercourse to be attenuated to mitigate volume of peak flows
4. Incorporation of Tree pits

Proposed System:

The proposed development sees rainwater collected and directed to underground drainage through downpipes. This drainage network will collect at the existing surface water outfall chamber, from which it discharges to the River Barrow watercourse via a non-return flap. The replacement of existing impermeable ground level hardstandings with permeable finishes, as well as the incorporation of planting and a tree pit, diminishes the peak stormwater flows to the watercourse.

The surface water network has been designed in accordance with the Building Regulations, Technical Guidance Document Part H

Conclusion:

All surface water run-off from the proposed development will be discharged to watercourse, designed for a 1 in 100-year storm event. All surface water run-off is directed to ground within the site boundaries in accordance with best practice. *The effective stormwater discharge from the applicant property is decreased as a result of this development.* Refer to Appendix A for Site Drainage Layout.

FOUL WATER DRAINAGE:

It is proposed to provide a new underground foul drainage network for the Grain Store and Café to cater for generated discharge volumes. The effluent generated in the Café's kitchen will first pass through a proprietary grease trap before falling into the private foul drainage network and ultimately to the public sewer. The office and exhibition spaces will be directed via gravity to the public sewer underlying Bridge Street to the south, via the publicly accessed laneway between No's 3 & 4 Bridge street. This sewer has been surveyed as a 450mmØ precast concrete pipe with invert levels that facilitate connection from the proposed development.

We have outlined below the anticipated population equivalent, on which basis the WWTP has been designed.

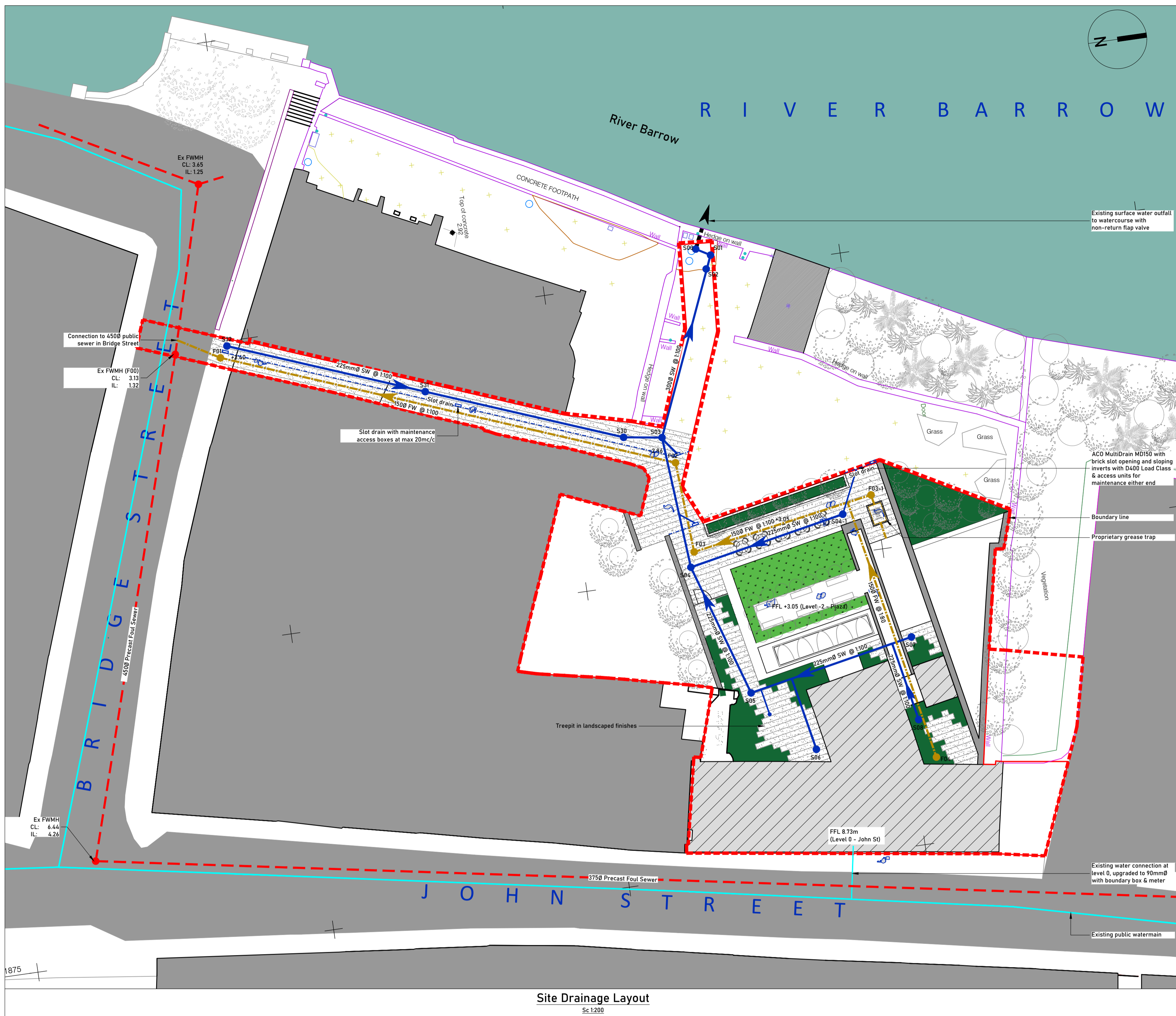
Calculations:

Occupancy types:	Office space and Public space/Cafe (pre-prepared meals)
Populations:	
Office	24 persons (accommodation schedule)
Community spaces/café	169 persons (accommodation schedule)
Flow Allocation:	100 l/day (Office with canteen – Irish Water CoP)
	25 l/h (Pre-prepared catering – Irish Water CoP)
Flow:	$24 \times 100 + 169 \times 25 \text{ l/h} = 6,625\text{litres}$ $= 6.625\text{m}^3$
Total Daily Flow:	6.625m^3
DWF:	0.15 l/s (over 12 hour period)
6DWF:	0.92 l/s

The foul sewer design flow (6 DWF) is 0.92l/sec, which is readily catered for by a 150mm diameter pipe installed at a minimum gradient of 1 in 100 (capacity = 18 l/s) to the public sewer.

Appendix A

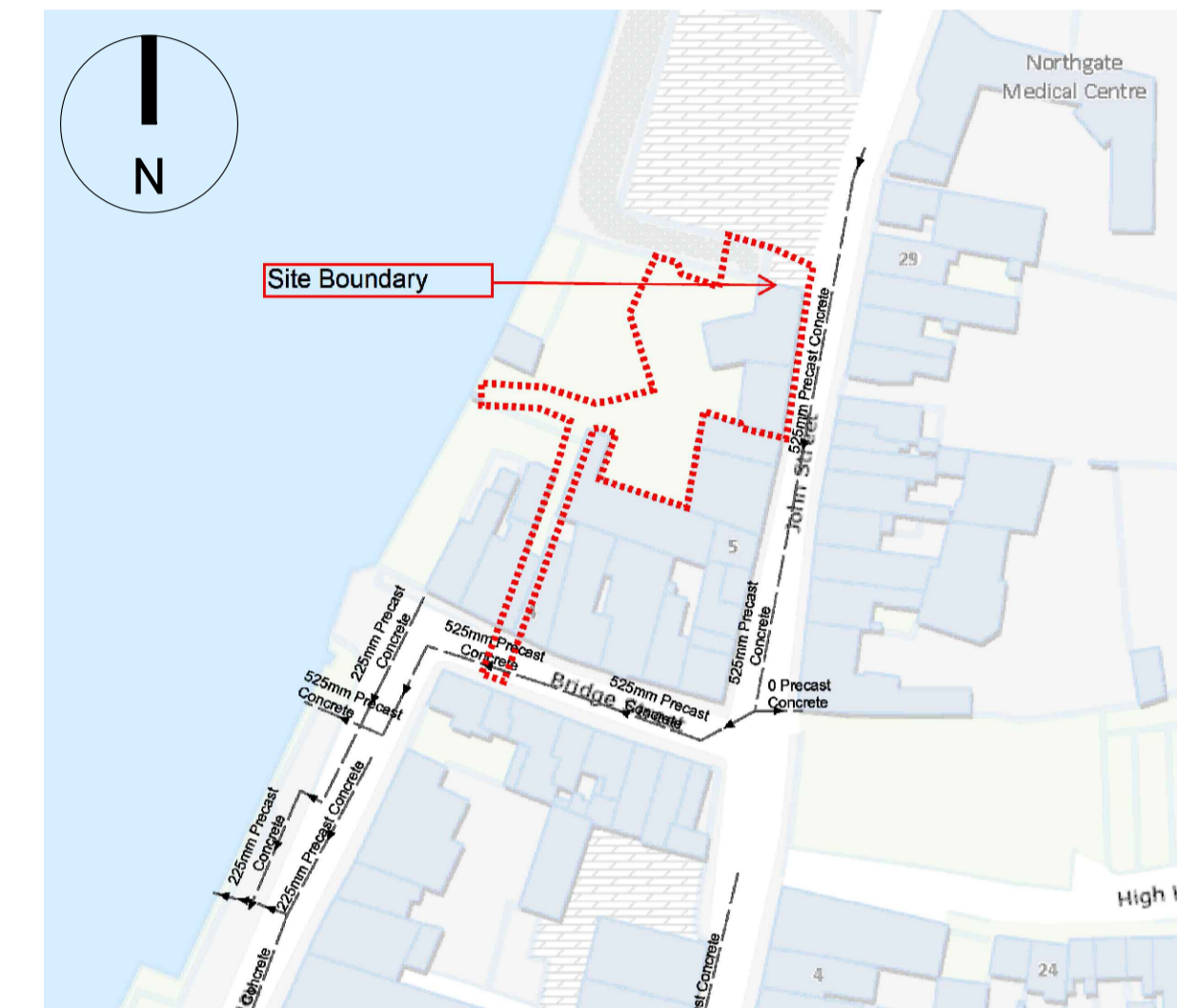
Site Drainage Layout



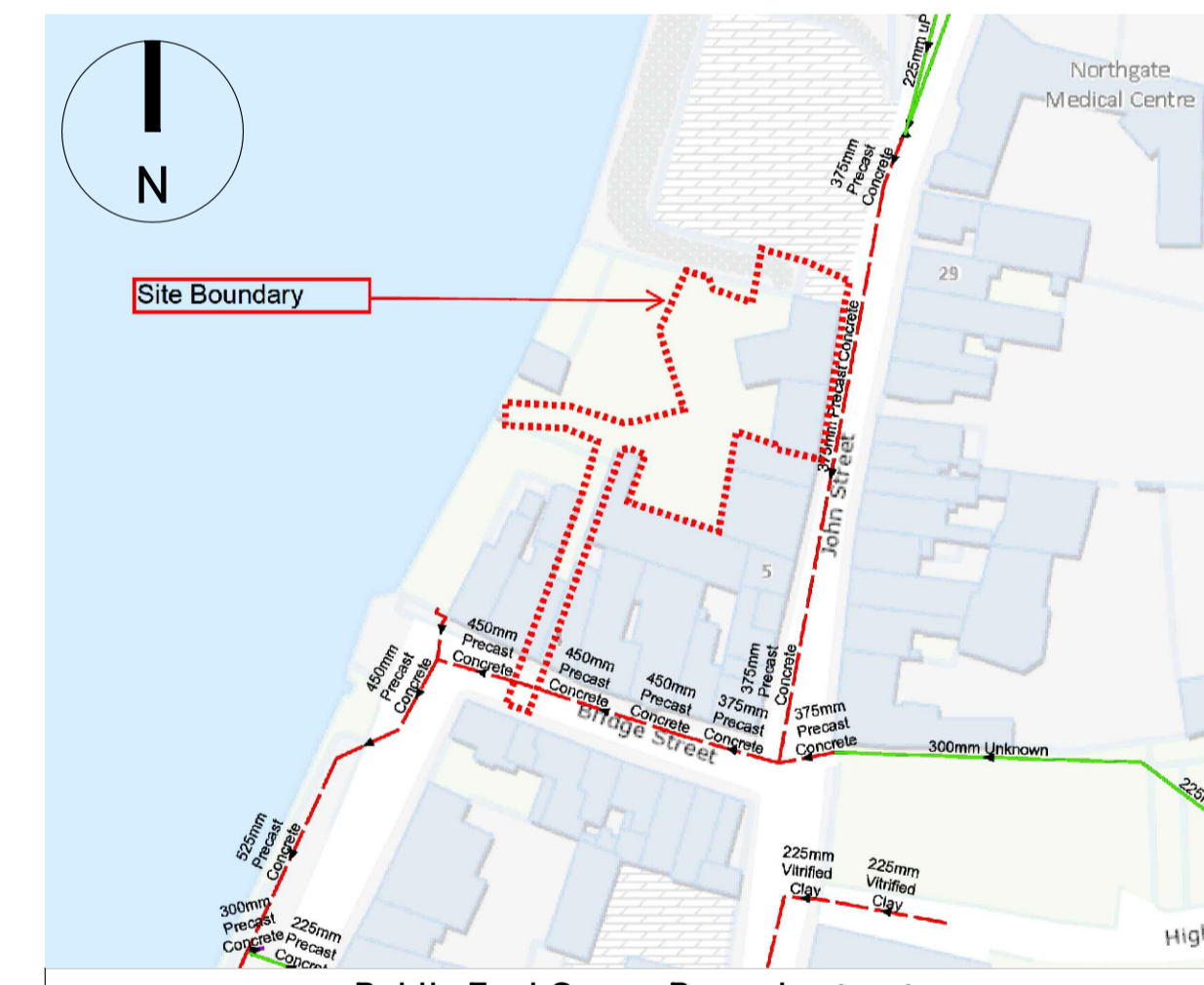
Site Drainage Layout
Sc 1:200

Manhole Schedule				Reference:	Cover Level:	Exit Invert Level:	Notes:
F00	3.13m	1.32m	Public manhole connection	S07	3.05m	2.45m	
F01	3.38m	1.52m	Fitted with non-return flap	S08	3.05m	2.65m	
F02	3.12m	1.91m		S30	2.90m	2.15m	
F03	3.05m	1.99m		S31	3.20m	2.35m	
F04	3.05m	2.41m		S32	3.40m	2.55m	
F03-1	3.05m	2.20m	Grease trap upstream				
S00	2.65m	Existing	Outfall chamber				
S01	2.65m	1.80m					
S02	2.70m	1.92m					
S03	2.85m	2.07m					
S04	3.05m	2.19m					
S04-1	3.05m	2.32m					
S05	3.05m	2.30m					
S06	3.05m	2.40m					

Legend	
Site Boundary	
Surface water drain	
BCE Foul Water Drain	
Public foul sewer	
Surface water linear drainage channel by ACO or equal approved	
Watermain	
Proposed building area	
Hard landscaped area - permeable	
Landscaped area - permeable	
Grass roof area	



Public Surface Water Sewer Record extract
Not to scale



Public Foul Sewer Record extract
Not to scale

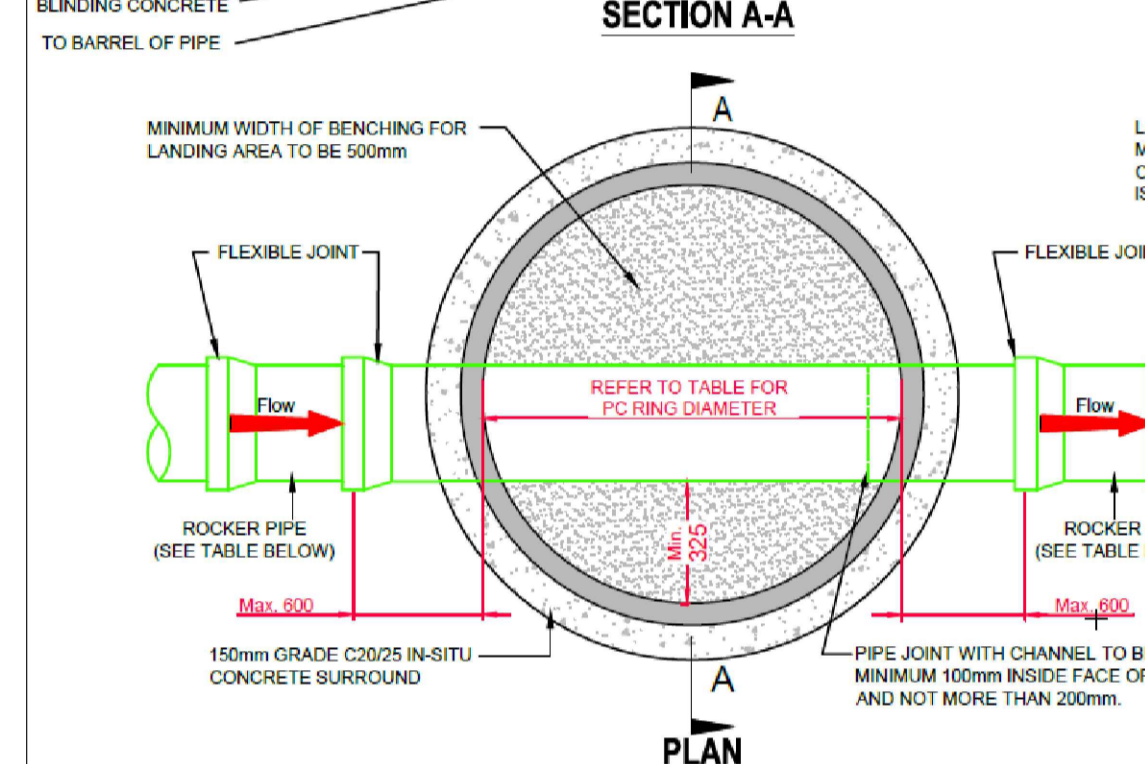
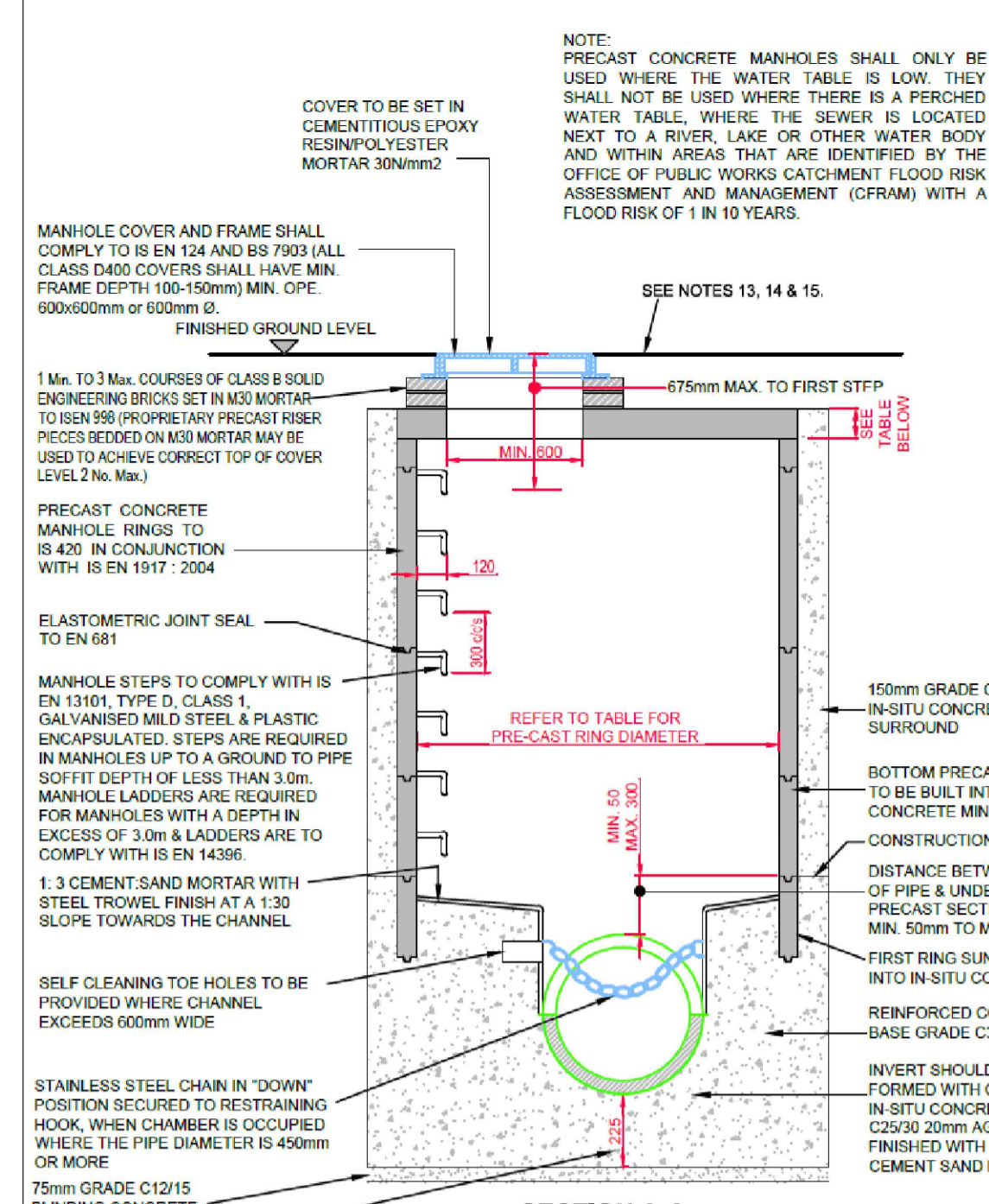
REVISION	DATE	DRAWN	REMARK
P2	23/01/24	-	Issued for planning
P1	19/01/24	-	Issued for planning

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER PROJECT DRAWINGS

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 - COVER TO REINFORCEMENT TO BE 35mm GENERALLY, 50mm FOR FOUNDATIONS.
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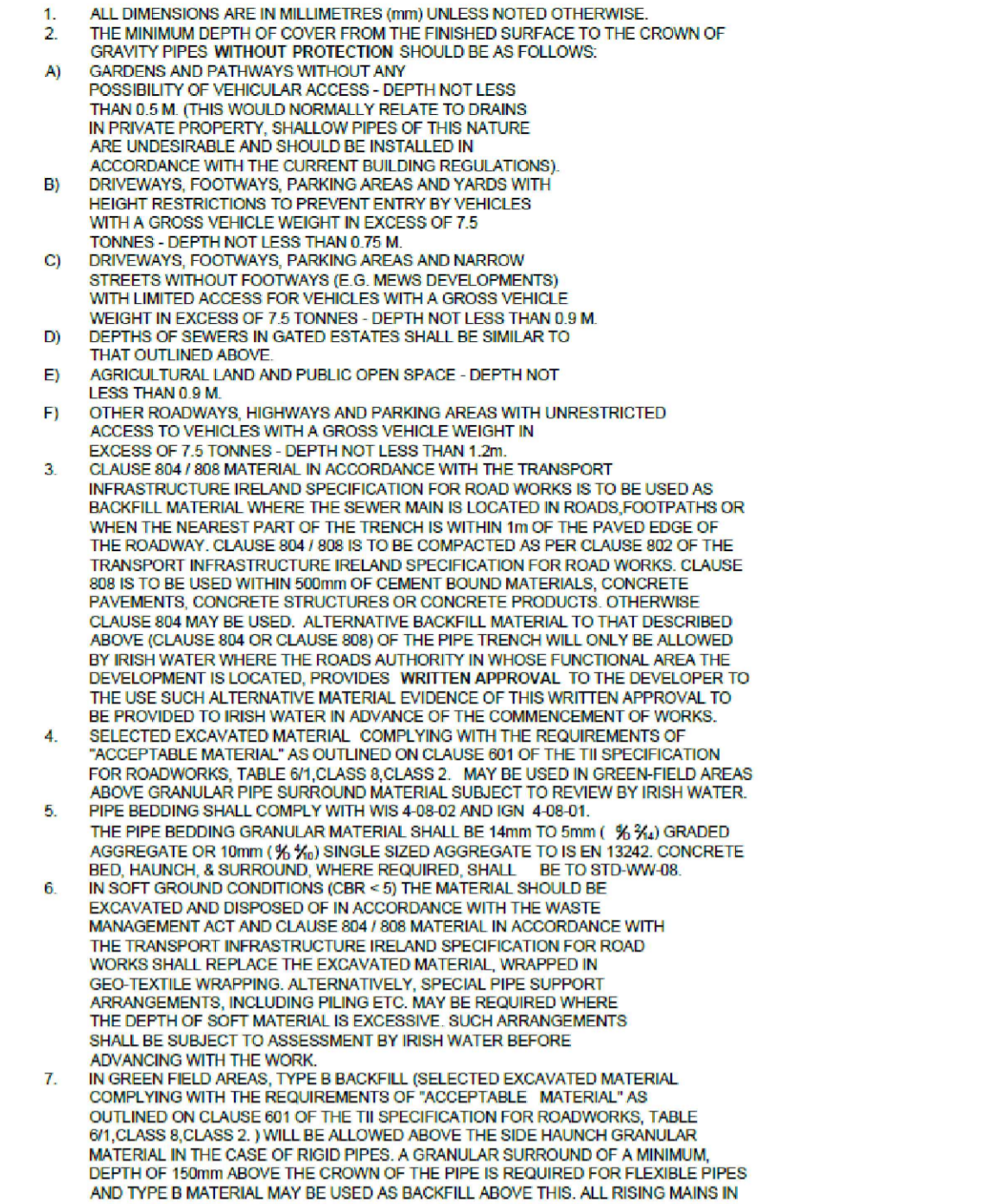
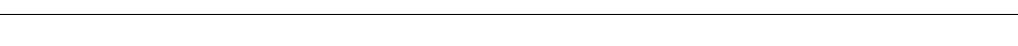
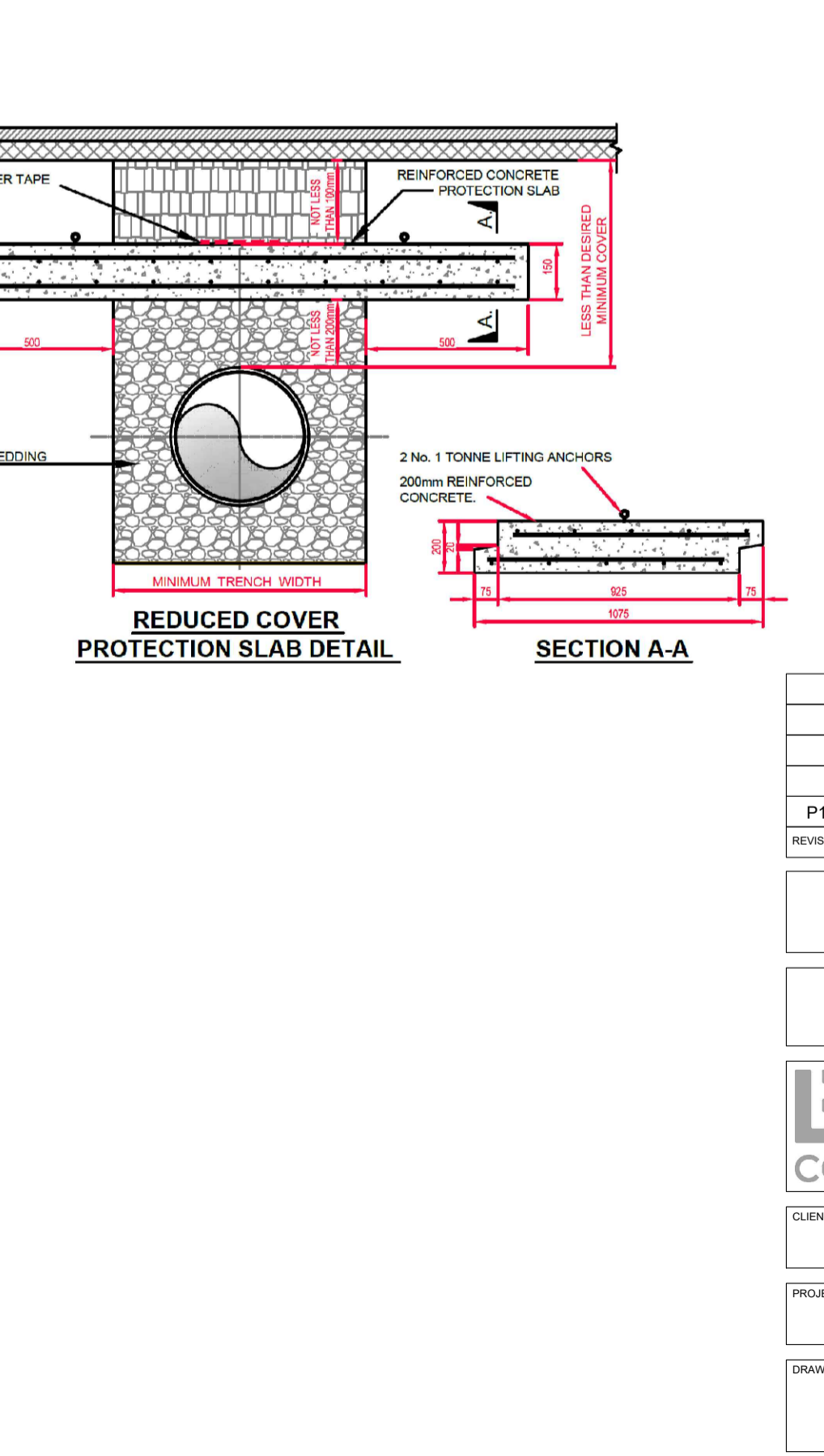
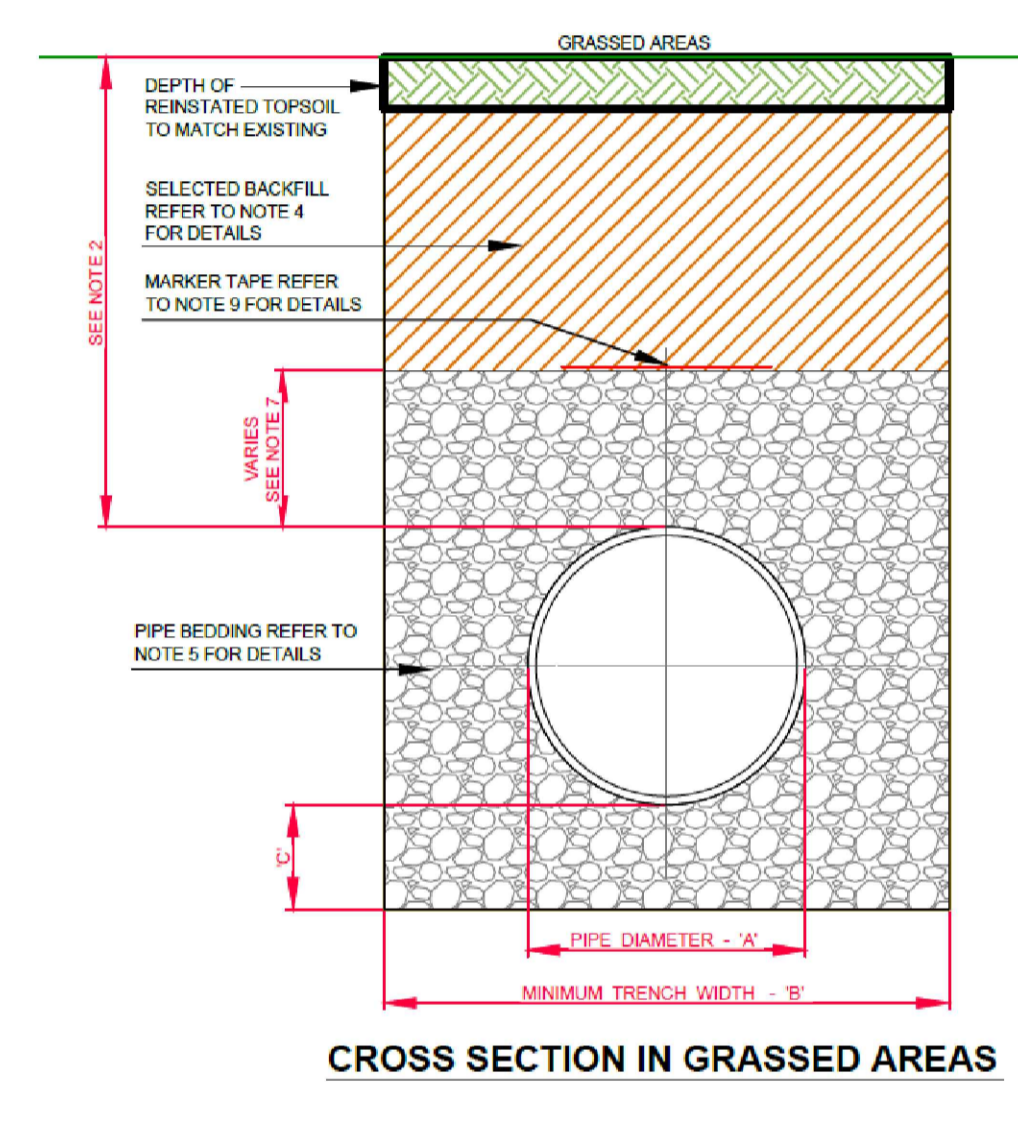
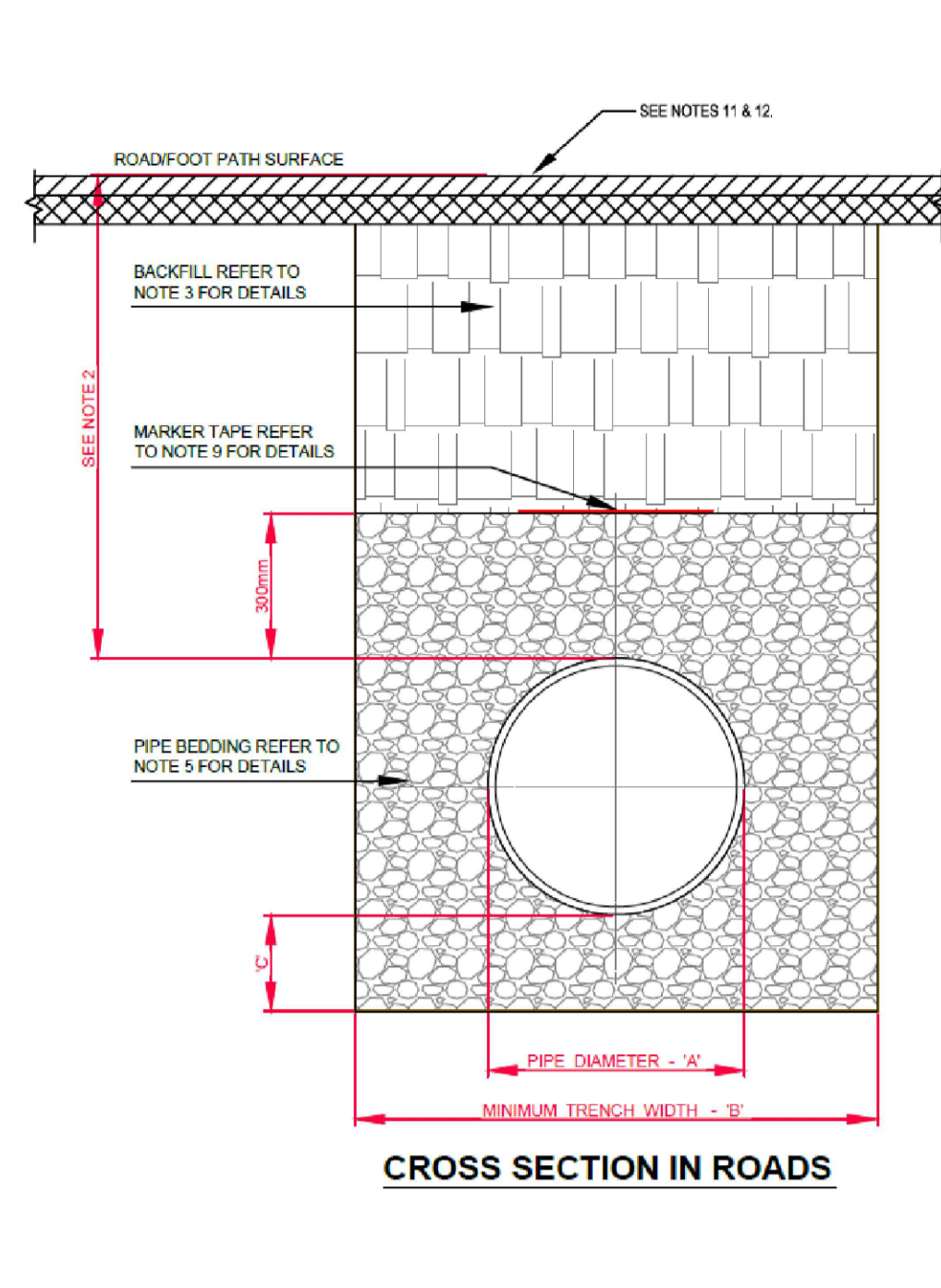
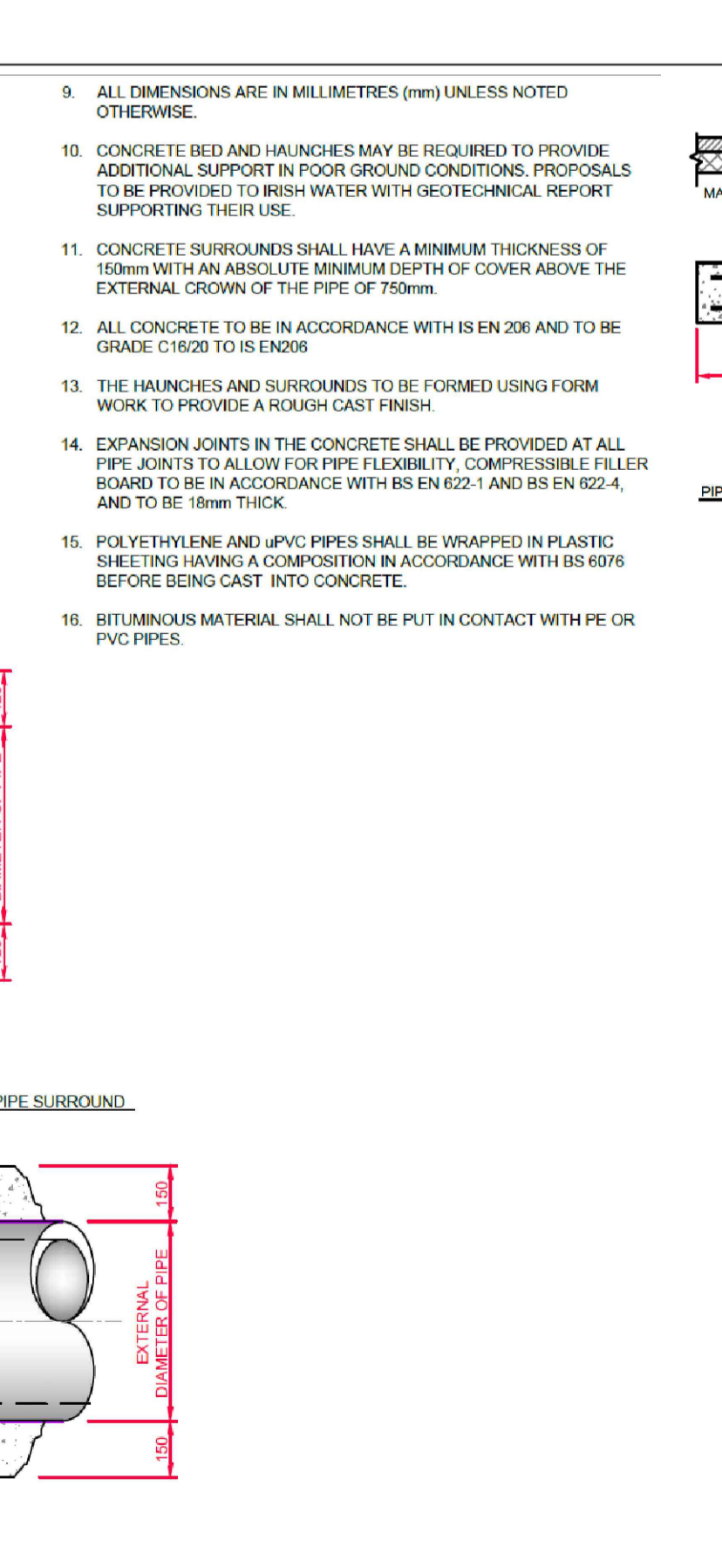
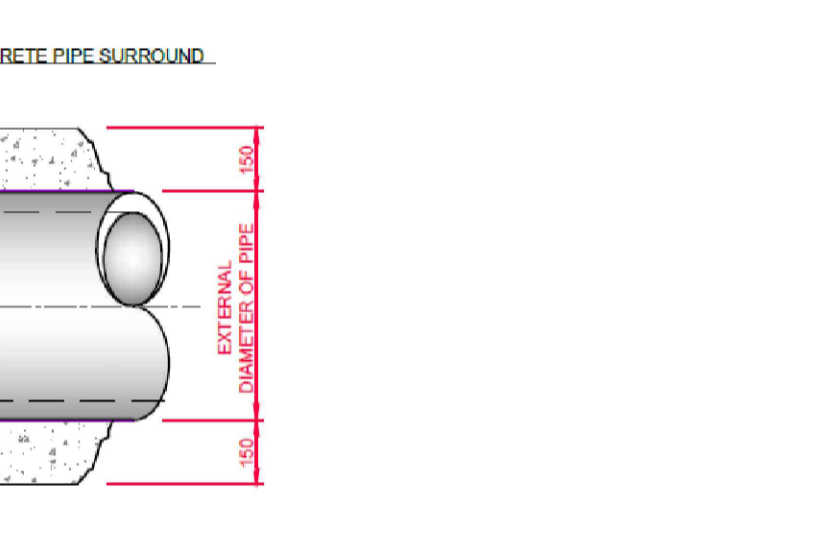
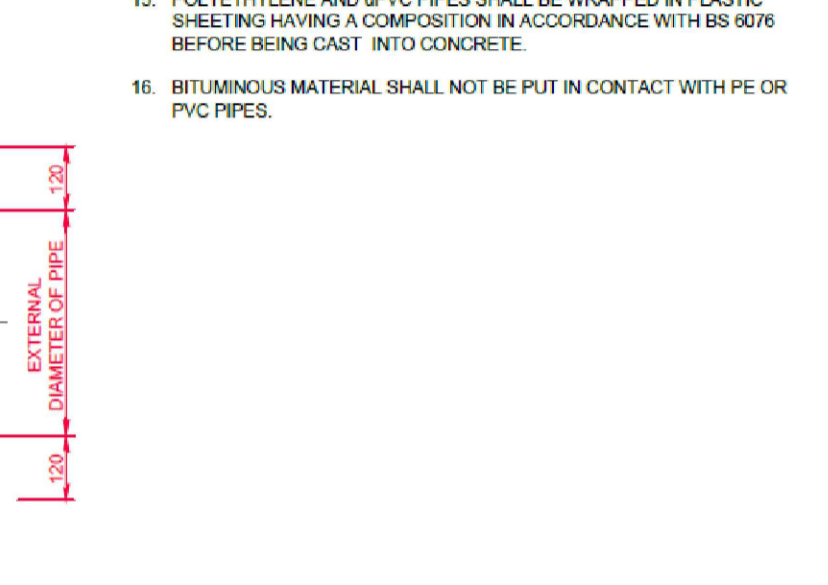
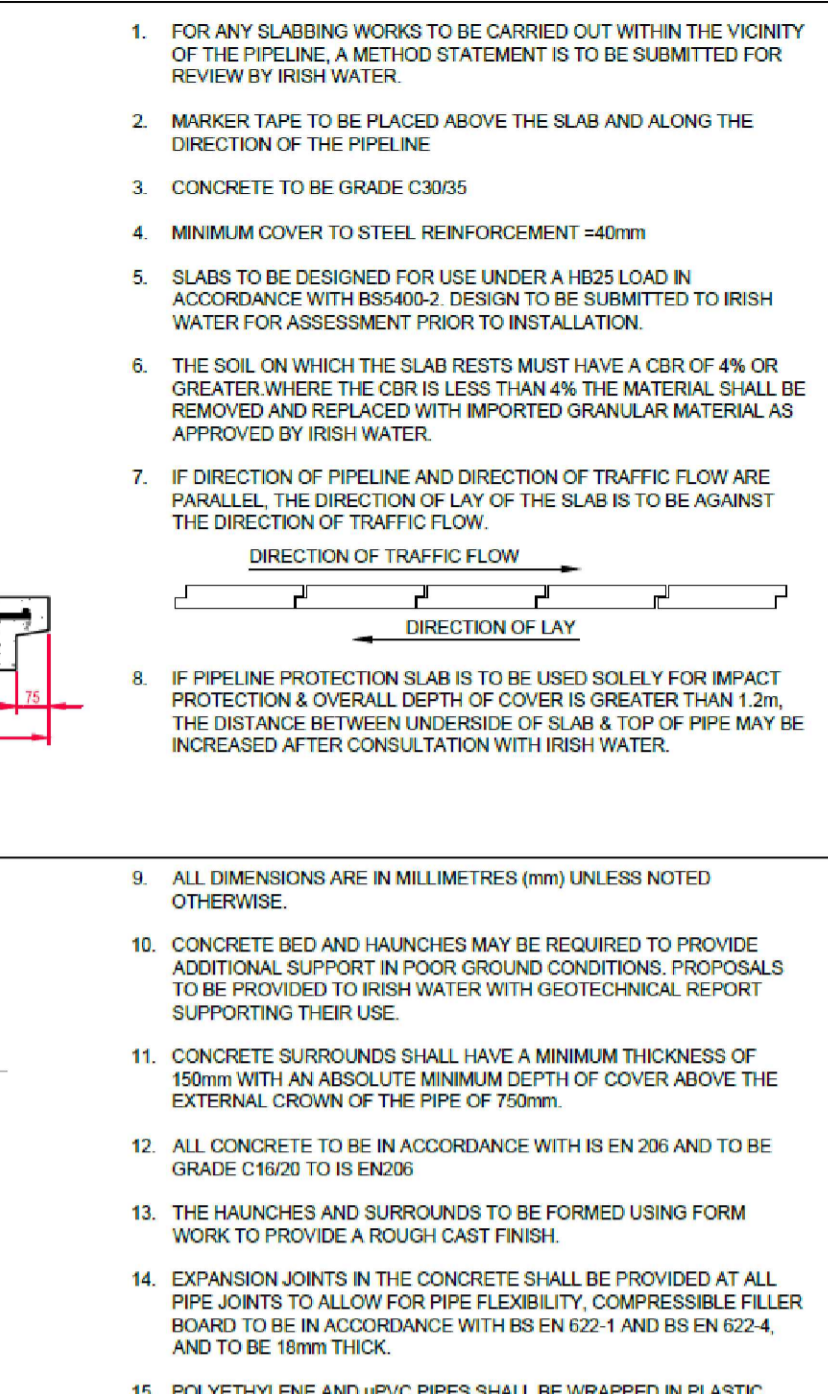
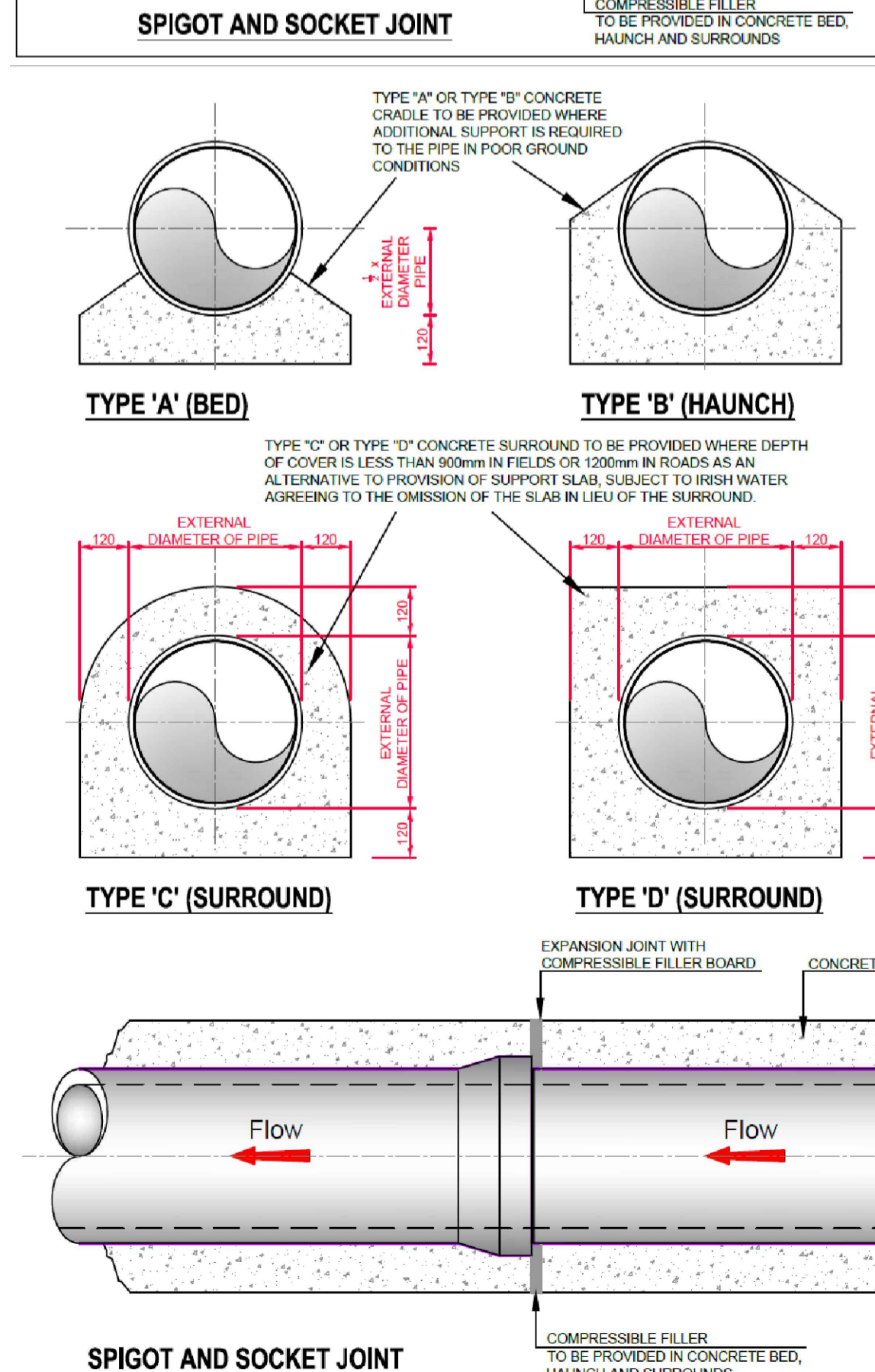
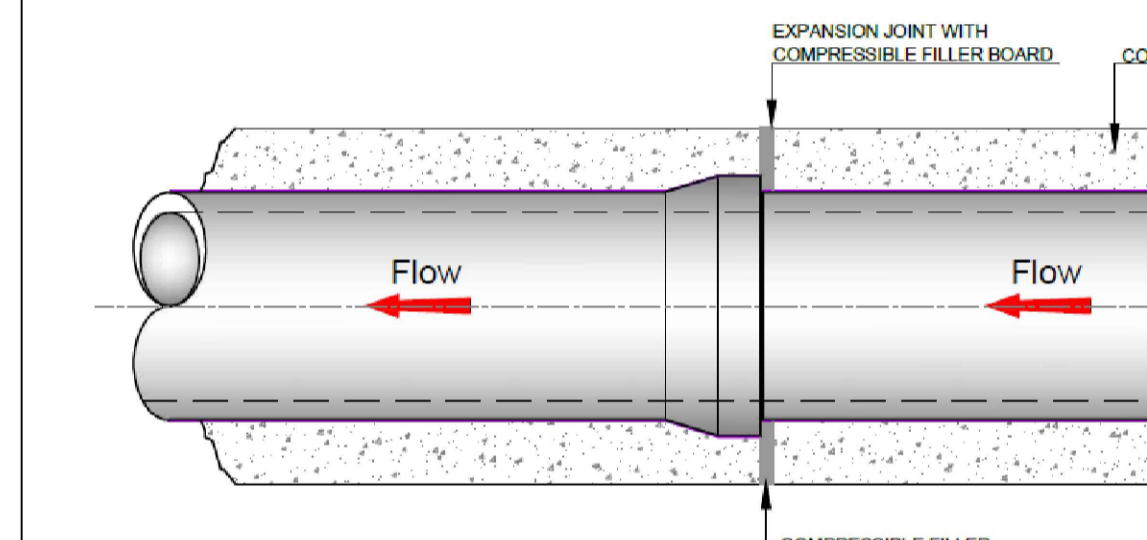
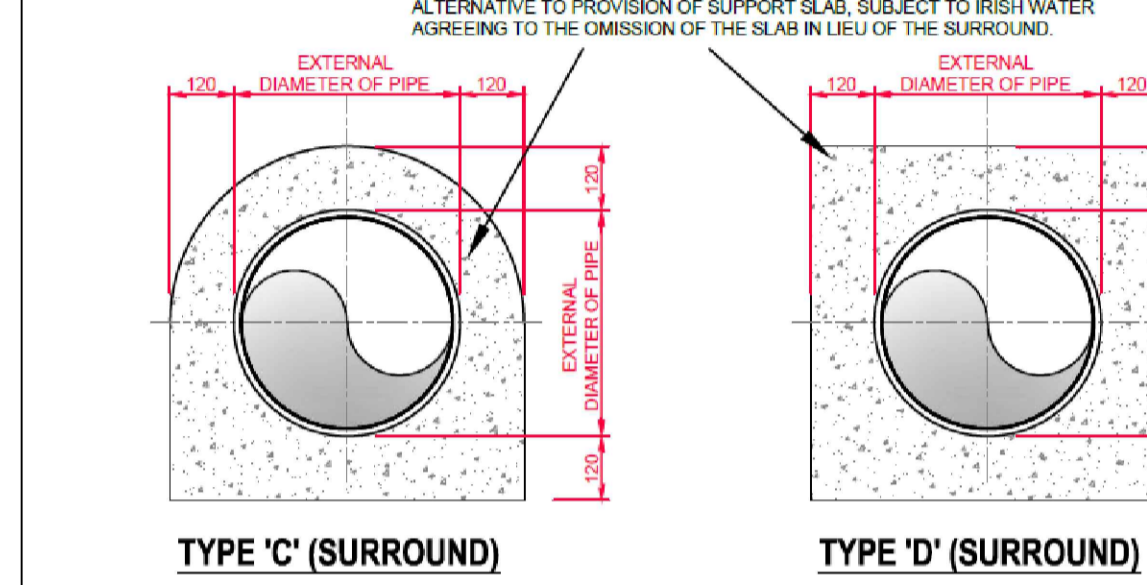
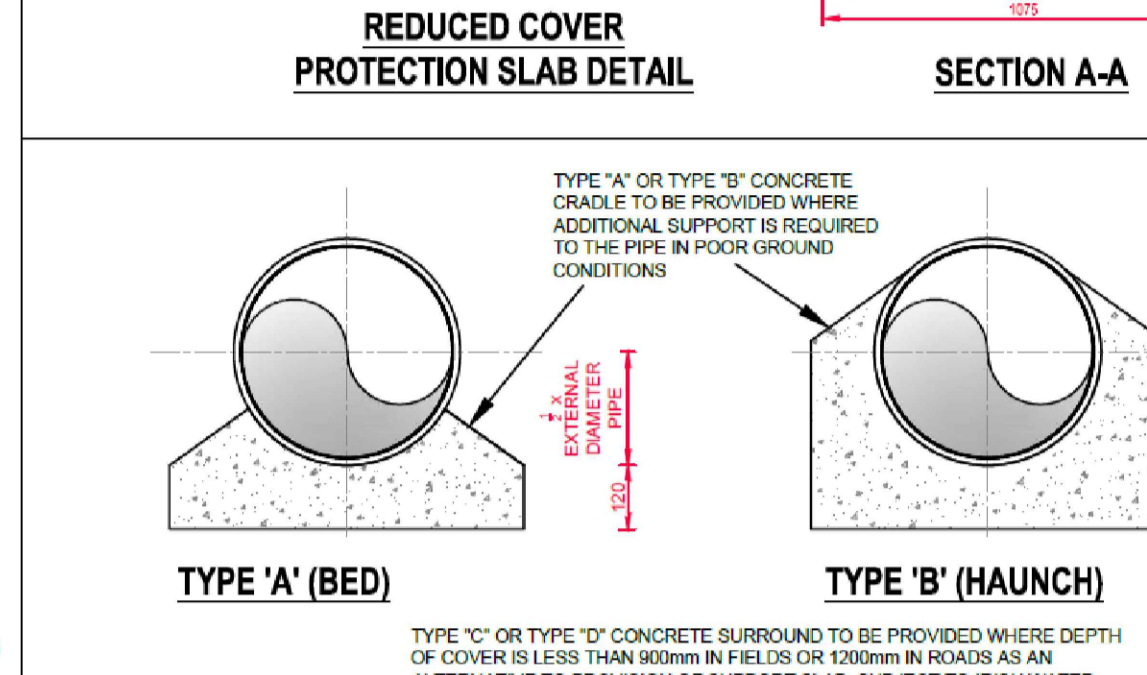
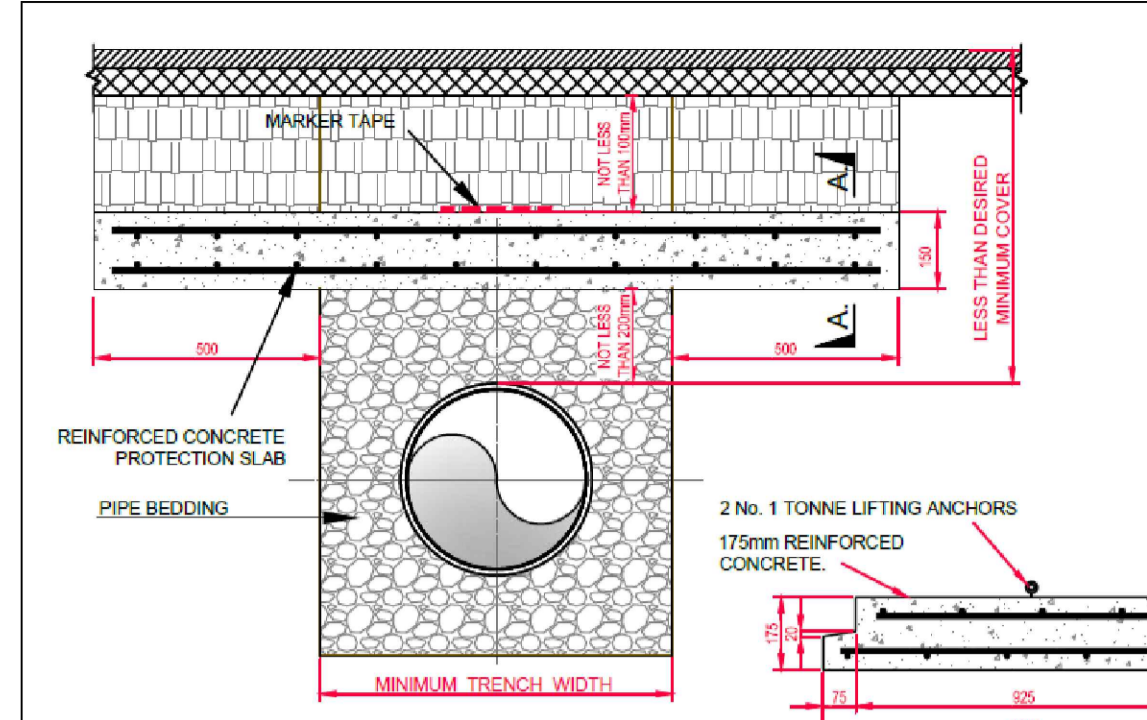
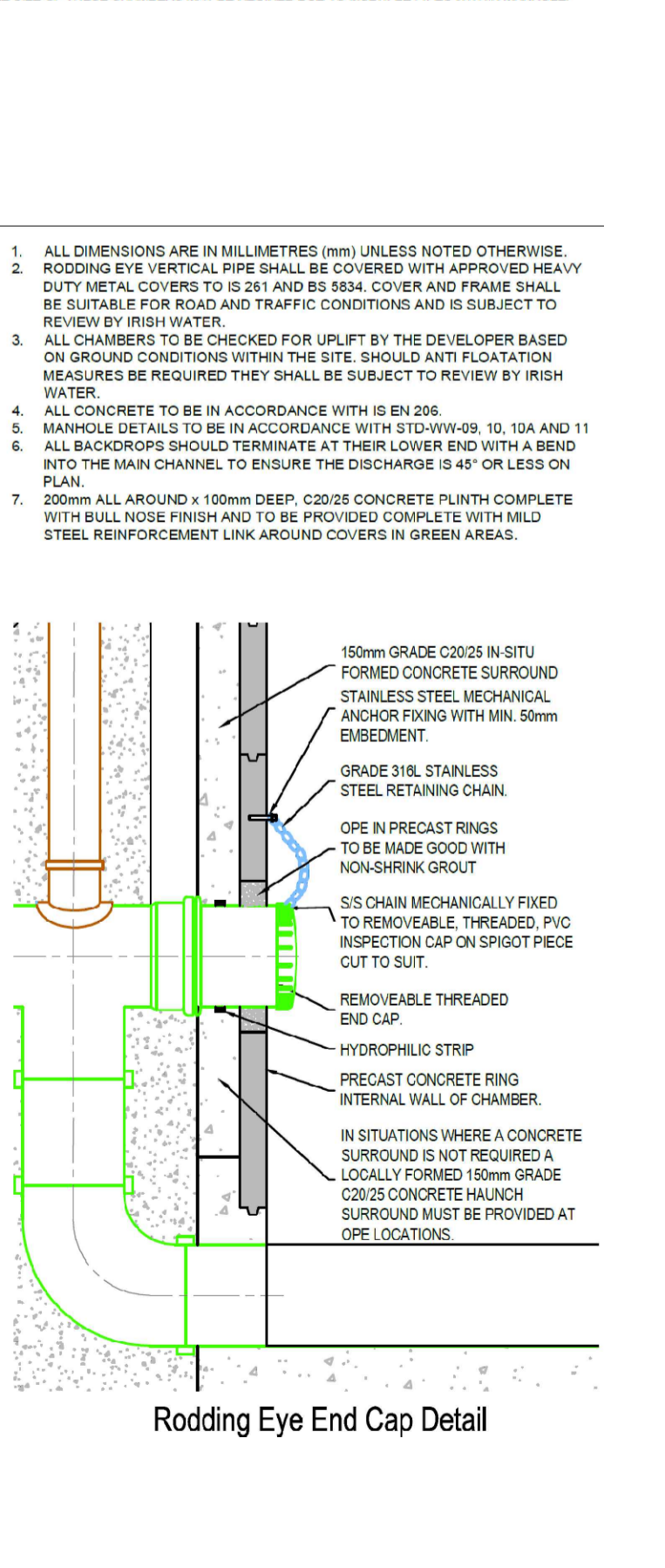
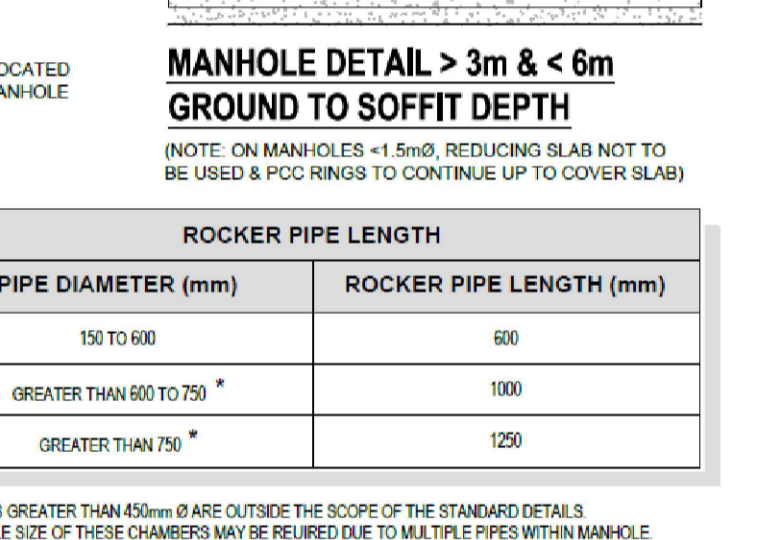
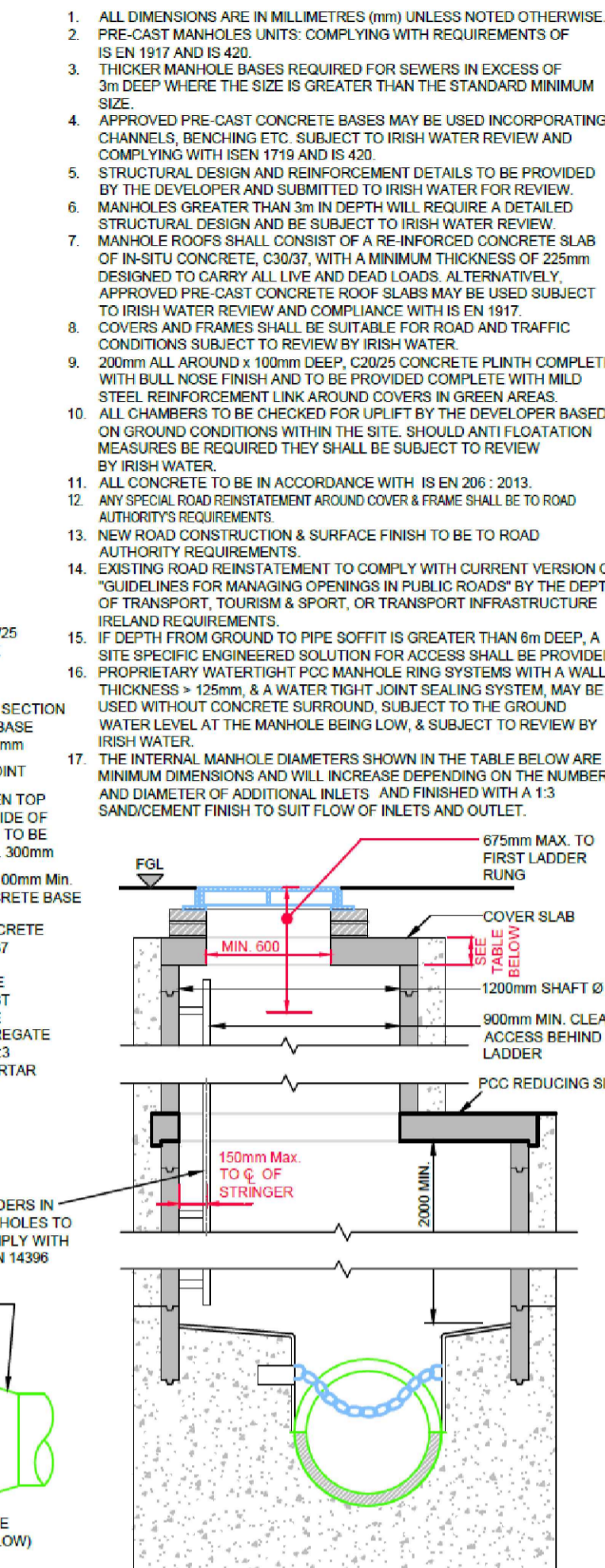
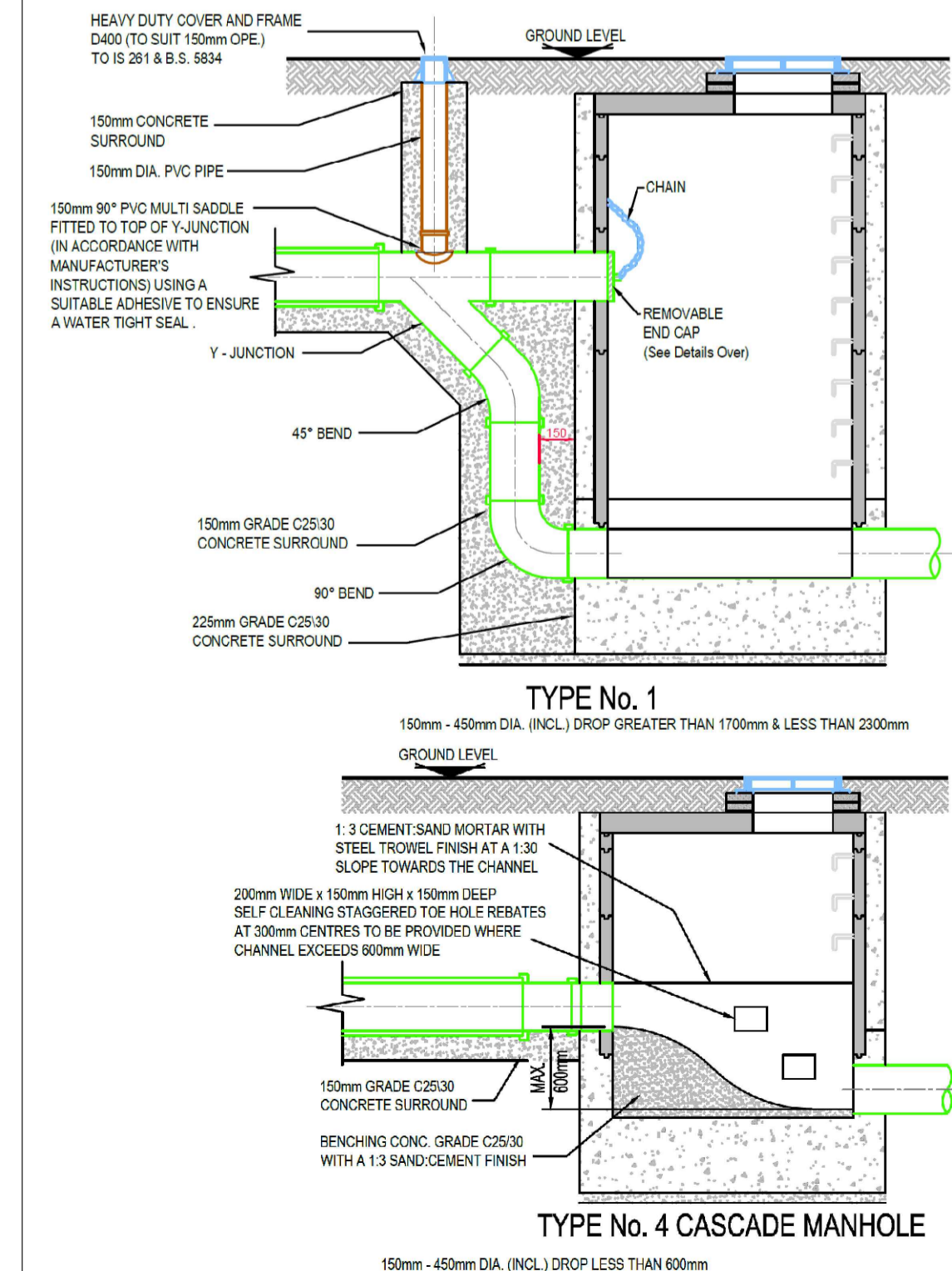
		2 Scarlet Row Essex Street West Dublin 2 Fossa Killarney Co. Kerry www.brunner.ie info@brunner.ie 1 01 478 9100	
CLIENT:	Wexford County Council	ARCHITECT:	ODKM Architects
PROJECT:	John Street Grain Store, John Street, New Ross, Co Wexford		
DRAWING:	Site drainage layout	DRAWING No:	J08-P-01
DATE:	November '23	SCALE:	1:200 @ A1
REVISION:	P2	REVISION:	P2



DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)	MIN. PRECAST ROOF SLAB EFFECTIVE THICKNESS (mm)	MIN. IN-SITU THICKNESS (mm)
LESS THAN 375	1200	160	225
375 TO 450	1500	160	225
450 TO 500	1700	170	225

PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	1000
GREATER THAN 600 TO 750 *	500
GREATER THAN 750 *	1200

* SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS. MANHOLE SIZE OF THESE CHAMBERS MAY BE REQUIRED DUE TO MULTIPLE PIPES WITHIN MANHOLE



PIPE DIAMETER 'A' (mm)	TRENCH WIDTH 'B' (mm)
≤ 80 RISING MAIN	SEE NOTE 10
100	500
150 - 200	600
> 200 - 350	750
> 350 - 450	900

PIPE DIAMETER 'A' (mm)	DEPTH OF BEDDING 'C' (mm)
≤ 100	100
150 - 450	200

13. FOR ANY SLABBING WORKS TO BE CARRIED OUT WITHIN THE VICINITY OF THE PIPELINE, A METHOD STATEMENT IS TO BE SUBMITTED FOR APPROVAL BY IRISH WATER.

14. MARKER TAPE TO BE PLACED ABOVE THE PROTECTION SLAB ALONG THE DIRECTION OF THE PIPELINE

15. CONCRETE TO BE GRADE C30/35

16. MINIMUM COVER TO STEEL REINFORCEMENT = 40mm

17. SLABS TO BE DESIGNED FOR USE UNDER A H25 LOAD IN ACCORDANCE WITH BS5400-2. DESIGN TO BE SUBMITTED TO IRISH WATER FOR ASSESSMENT PRIOR TO INSTALLATION

18. THE SOIL ON WHICH THE SLAB RESTS MUST HAVE A CBR OF 4% OR GREATER WHERE THE CBR IS LESS THAN 4% THE MATERIAL SHALL BE REMOVED AND REPLACED WITH IMPORTED GRANULAR MATERIAL AS APPROVED BY IRISH WATER.

19. IF DIRECTION OF PIPELINE AND DIRECTION OF TRAFFIC FLOW ARE PARALLEL, THE DIRECTION OF LAY OF THE SLAB IS TO BE AGAINST THE DIRECTION OF TRAFFIC FLOW

20. IF PIPELINE PROTECTION SLAB IS TO BE USED SOLELY FOR IMPACT PROTECTION & OVERALL DEPTH OF COVER IS GREATER THAN 1.2m, THE DISTANCE BETWEEN UNDERSIDE OF SLAB & TOP OF PIPE MAY BE INCREASED AFTER CONSULTATION WITH IRISH WATER.

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CLIENT: Wexford County Council ARCHITECT: ODKM Architects

PROJECT: John Street Grain Store, John Street, New Ross, Co Wexford

DRAWING: Drainage construction details DRAWING NO: J08-P-02 SCALE: Not to scale

SHEET: Sheet 1 DATE: November '23 REVISION: P1

