

DRAINAGE INSTALLATION INFORMATION
for a development at
THE FORMER POMONA HOTEL SITE, GORTON
Undertaken on behalf of
JOHN SOUTHWORTH BUILDERS LTD

Report Title:	Drainage Installation Information
Report Reference:	9079/DII/01
Client:	John Southworth Builders Ltd
Issue Date:	August 2021
Drafted By:	Kevin Tyldesley
Authorised By:	Andrew Leng

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1.0 DRAINAGE INSTALLATION INFORMATION

1.1 WML Consulting have been commissioned by John Southworth Builders Ltd (JSBL) to provide a response to planning condition 6 of planning consent ref. 124380 / FO / 2019.

1.2 The proposed development to which this consent relates is the proposed erection of a two storey building with additional accommodation in the roof space to provide 15 no. residential apartments with associated detached garden room, car parking, landscaping and boundary treatments.

1.3 Condition 6 of this consent is as below in blue font.

No development hereby permitted shall be occupied until details of the implementation, maintenance and management of the sustainable drainage scheme have been submitted to and approved by the local planning authority. The scheme shall be implemented and thereafter managed and maintained in accordance with the approved details. Those details shall include:

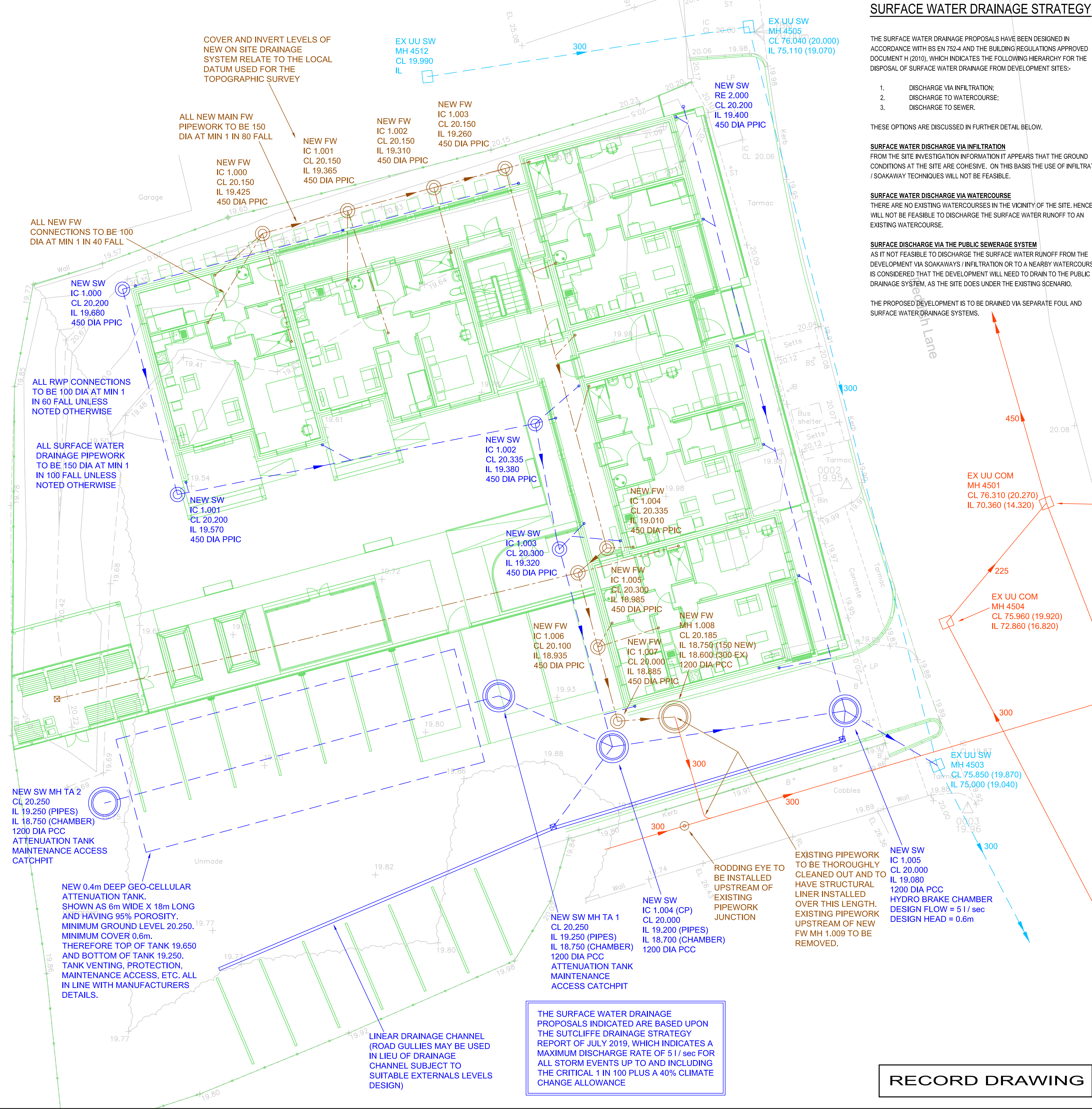
- Verification report providing photographic evidence of construction as per design drawings;*
- As built construction drawings if different from design construction drawings;*
- Management and maintenance plan for the lifetime of the development which shall include the arrangements for adoption by any public body or statutory undertaker, or any other arrangements to secure the operation of the sustainable drainage scheme throughout its lifetime.*

1.4 In response to the above WML have produced this document which contains a series of appendices as listed below

- Appendix A – Record drawings indicating the as installed below ground drainage infrastructure. Note that the maintenance information requested via the third bullet point above is provided on WML drawing 1001. Note also that JSBL have confirmed that the below ground drainage proposals were installed in line with WML's construction status drawings and calculations.
- Appendix B – Surface water drainage calculations for the system indicated in Appendix A.
- Appendix C – Photographs of the installation of the drainage infrastructure.
- Appendix D – United Utilities confirmation that the surface water connection to the public sewer network has been completed to their satisfaction

1.5 It is considered that this document with its various appendices adequately respond to the information requested via planning condition 6, and hence it can be discharged.

APPENDIX A
Record Drawings



SURFACE WATER DRAINAGE STRATEGY

THE SURFACE WATER DRAINAGE PROPOSALS HAVE BEEN DESIGNED IN ACCORDANCE WITH BS EN 752-4 AND THE BUILDING REGULATIONS APPROVED DOCUMENT H (2010), WHICH INDICATES THE FOLLOWING HIERARCHY FOR THE DISPOSAL OF SURFACE WATER DRAINAGE FROM DEVELOPMENT SITES:-

- 1. DISCHARGE VIA INFILTRATION;
- 2. DISCHARGE TO WATERCOURSE;
- 3. DISCHARGE TO SEWER.

THESE OPTIONS ARE DISCUSSED IN FURTHER DETAIL BELOW.

SURFACE WATER DISCHARGE VIA INFILTRATION
FROM THE SITE INVESTIGATION INFORMATION IT APPEARS THAT THE GROUND CONDITIONS AT THE SITE ARE COHESIVE. ON THIS BASIS THE USE OF INFILTRATION / SOAKAWAY TECHNIQUES WILL NOT BE FEASIBLE.

SURFACE WATER DISCHARGE VIA WATERCOURSE
THERE ARE NO EXISTING WATERCOURSES IN THE VICINITY OF THE SITE. HENCE IT WILL NOT BE FEASIBLE TO DISCHARGE THE SURFACE WATER RUNOFF TO AN EXISTING WATERCOURSE.

SURFACE DISCHARGE VIA THE PUBLIC SEWERAGE SYSTEM
AS IT NOT FEASIBLE TO DISCHARGE THE SURFACE WATER RUNOFF FROM THE DEVELOPMENT VIA SOAKAWAYS / INFILTRATION OR TO A NEARBY WATERCOURSE, IT IS CONSIDERED THAT THE DEVELOPMENT WILL NEED TO DRAIN TO THE PUBLIC DRAINAGE SYSTEM, AS THE SITE DOES UNDER THE EXISTING SCENARIO.

THE PROPOSED DEVELOPMENT IS TO BE DRAINED VIA SEPARATE FOUL AND SURFACE WATER DRAINAGE SYSTEMS.

GENERAL NOTES (CONT)

ALL SURFACE WATER CONNECTIONS TO BE 100mm DIAMETER AT MINIMUM FALLS OF 1:40 UNLESS NOTED OTHERWISE.

ALL FOUL WATER CONNECTIONS TO BE 100mm DIAMETER AT MINIMUM FALLS OF 1:40 UNLESS NOTED OTHERWISE.

ALL CONNECTIONS TO BE MADE IN ACCORDANCE WITH STANDARD DETAIL DRAWINGS.

ALL PIPEWORK TO BE INSTALLED WITH SOFFITS LEVEL (E.G. AT CHANGES IN PIPE SIZE) U.N.O.

FOR DETAILS OF GREASE TRAP / MACERATOR REQUIREMENTS ASSOCIATED WITH KITCHENS REFER TO SERVICE ENGINEER.

ON COMPLETION OF DRAINAGE WORKS, THE NEW DRAINAGE SYSTEM IS TO BE THOROUGHLY CLEANED AND A CCTV SURVEY CARRIED OUT TO CONFIRM NO CONSTRUCTION DEBRIS OR BLOCKAGES REMAIN.

CONNECTIONS TO CARRIER DRAINS ARE TO BE "Y" JUNCTIONS.

ALL PRIVATE DRAINAGE IS TO COMPLY WITH BS EN 752 AND BUILDING REGS. PART H.

PIPE GRADIENTS ARE INDICATIVE MINIMUMS.

SURFACE CHANNEL DRAINS TO BE ACO MULTIDRAIN OR SIMILAR.

MANHOLE COVERS IN VEHICULAR AREAS TO BE EN124 CLASS D400, IN NON - VEHICULAR AREAS TO BE EN124 CLASS C250.

COVER AND INVERT LEVELS OF THE EXISTING PUBLIC DRAINAGE SYSTEM RELATE TO OS DATUM AND ARE AS INDICATED ON UU SEWER RECORDS. THE LEVEL INFORMATION PROVIDED IN BRACKETS INDICATES THESE LEVELS ADJUSTED TO THE LOCAL DATUM USED FOR THE TOPOGRAPHIC SURVEY

MAINTENANCE OF THE BELOW GROUND DRAINAGE SYSTEM

THE BELOW GROUND FOUL AND SURFACE WATER DRAINAGE PROPOSALS INDICATED ARE RELATIVELY TRADITIONAL IN NATURE, AND SHOULD PROVIDE YEARS OF RELATIVELY LOW MAINTENANCE OPERATION IN RELATION TO THE ANTICIPATED LIFESPAN OF THE PROPOSED DEVELOPMENT.

IN LINE WITH CURRENT GOOD PRACTICE:-

- GULLIES AND LINEAR DRAINAGE CHANNELS SHOULD BE INSPECTED AND / OR CLEANED OUT AT 6 MONTHLY INTERVALS.
- INSPECTION CHAMBERS, MANHOLES, CATCHPITS, ETC. SHOULD BE INSPECTED AT 6 MONTHLY INTERVALS TO ENSURE THAT THE PIPEWORK ASSOCIATED WITH THEM IS RUNNING FREELY.
- THE CHAMBERS TO EITHER SIDE OF THE GEO-CELLULAR ATTENUATION TANK SHOULD BE INSPECTED AT 6 MONTHLY INTERVALS TO ENSURE THAT THE PIPEWORK / ACCESS CHANNEL THAT PASSES THROUGH THE TANK IS CLEAR OF SILT AND DEBRIS AND THAT IT IS RUNNING FREELY.

ANY PROBLEMS HIGHLIGHTED BY THESE INSPECTIONS WILL NEED TO BE INVESTIGATED, POSSIBLY BY CCTV SURVEY, TO CONFIRM THE NATURE OF THE PROBLEM AND TO ALLOW IT TO BE REMEDIED IN A TIMELY MANNER.

THE MONITORING AND ROUTINE MAINTENANCE OF THE BELOW GROUND DRAINAGE SYSTEM WILL BE CARRIED OUT BY THE SITE'S MAINTENANCE STAFF WITH ADDITIONAL HELP PROVIDED BY EXTERNAL SPECIALIST DRAINAGE PROFESSIONALS BROUGHT IN AS REQUIRED.

GENERAL NOTES

DO NOT SCALE FROM THIS DRAWING WORK TO FIGURED DIMENSIONS ONLY.

NO DEVIATION FROM THE DETAILS SHOWN ON THIS DRAWING IS ALLOWED WITHOUT PRIOR PERMISSION IN WRITING.

ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION.

THE CONTRACTOR SHALL INCORPORATE ALL THE REQUIREMENTS OF THE PRE-TENDER STAGE HEALTH AND SAFETY PLAN.

FOR DETAILS OF MATERIALS AND WORKMANSHIP REFER TO THE SPECIFICATION.

THE CONTRACTOR IS RESPONSIBLE FOR CHECKING INVERT LEVELS AND POSITIONS OF ALL EXISTING DRAINS, SEWERS, INSPECTION CHAMBERS AND MANHOLES SHOWN ON THIS DRAWING IMMEDIATELY ON SITE ESTABLISHMENT. ANY DISCREPANCIES MUST BE REPORTED TO WML CONSULTING IMMEDIATELY.

WHERE THE NEW SITE DRAINAGE CONNECTS IN TO EXISTING MANHOLES IN CARRIAGEWAYS AND / OR EXISTING ADOPTED SEWERS, THE CONTRACTOR IS RESPONSIBLE FOR ALL LIAISON WITH THE RELEVANT STATUTORY UNDERTAKER AND LOCAL AUTHORITY WITH REGARD TO ROAD CLOSURES, TRAFFIC MANAGEMENT, PERMITS TO WORK, SUBMISSION OF CONTRACTORS METHOD STATEMENTS AND RISK ASSESSMENTS AND OTHER DOCUMENTATION AND CORRESPONDENCE ASSOCIATED WITH THE SITE STAGE (PART 2) ELEMENT OF THE WORKS.

ROCKER PIPES TO BE PROVIDED AT ALL CONCRETE CASED INTERFACES.

PROVIDE ADEQUATE PROTECTION TO MAINTAIN MINIMUM COVER TO DRAINS DURING THE CONSTRUCTION PERIOD.

COVER LEVELS ON THIS DRAWING ARE APPROXIMATE AND INDICATIVE ONLY ARCHITECT TO CONFIRM COVER LEVELS TO ALL MANHOLES AND GULLIES PRIOR TO CONSTRUCTION.

THE LAYOUT OF DRAINAGE ON THIS DRAWING IS INDICATIVE ONLY ARCHITECT TO CONFIRM EXACT LOCATION OF MANHOLES AND GULLIES.

U.N.O. ALL DRAINAGE GOODS & FITTINGS TO BE:-

UPTO 225 DIA (AND INCLUDING) TO BE SUPERSLEVE VITRIFIED CLAY PIPES OR SIMILAR.

300 DIA AND ABOVE TO BE CONCRETE BY STANTON BONNA OR SIMILAR.

ALL COVERS AND RODDING ACCESS POINTS TO BE SEALED AND SCREWED TIGHT.

ALL INTERNAL MANHOLE COVERS TO BE DOUBLE SEALED, LOCKABLE AND RECESSED TO ACCEPT FLOOR FINISHES WHERE APPLICABLE.

SETTING OUT OF ALL INTERNAL GULLY / PLUMBING CONNECTIONS TO BE CO-ORDINATED BETWEEN THE SERVICE ENGINEERS AND THE ARCHITECT.

ALL INTERNAL GULLIES, PLUMBING CONNECTIONS, SOIL STACKS, SVPS AND ALL OTHER CONNECTIONS OF FOUL AND SURFACE WATER DRAINS TO BELOW GROUND TO BE FITTED WITH ACCESSIBLE RODDING POINTS ABOVE SLAB LEVEL.

R01	RECORD ISSUE.	13.08.21	KPT	AL
C04	RODDING EYE ADDED TO EXISTING FOUL DRAINAGE CONNECTION	04.01.21	KPT	AL
C03	COVER LEVELS REVISED. SVP LOCATIONS UPDATED TO SUIT LATEST INFO. SITE LAYOUT UPDATED.	15.07.20	KPT	AL
C02	AMENDED TO JSL COMMENTS.	06.07.20	KPT	AL
C01	FOUL DRAINAGE AMENDED. ISSUED FOR CONSTRUCTION.	28.05.20	KPT	AL
P02	NOTATION ADDED.	28.02.20	KPT	AL
P01	PRELIMINARY ISSUE.	22.01.20	KPT	AL
Rev.	Amendment	Date	By	Chkd

Project

POMONA HOTEL SITE, GORTON

Client

JOHN SOUTHWORTH BUILDERS

Title

DRAINAGE LAYOUT

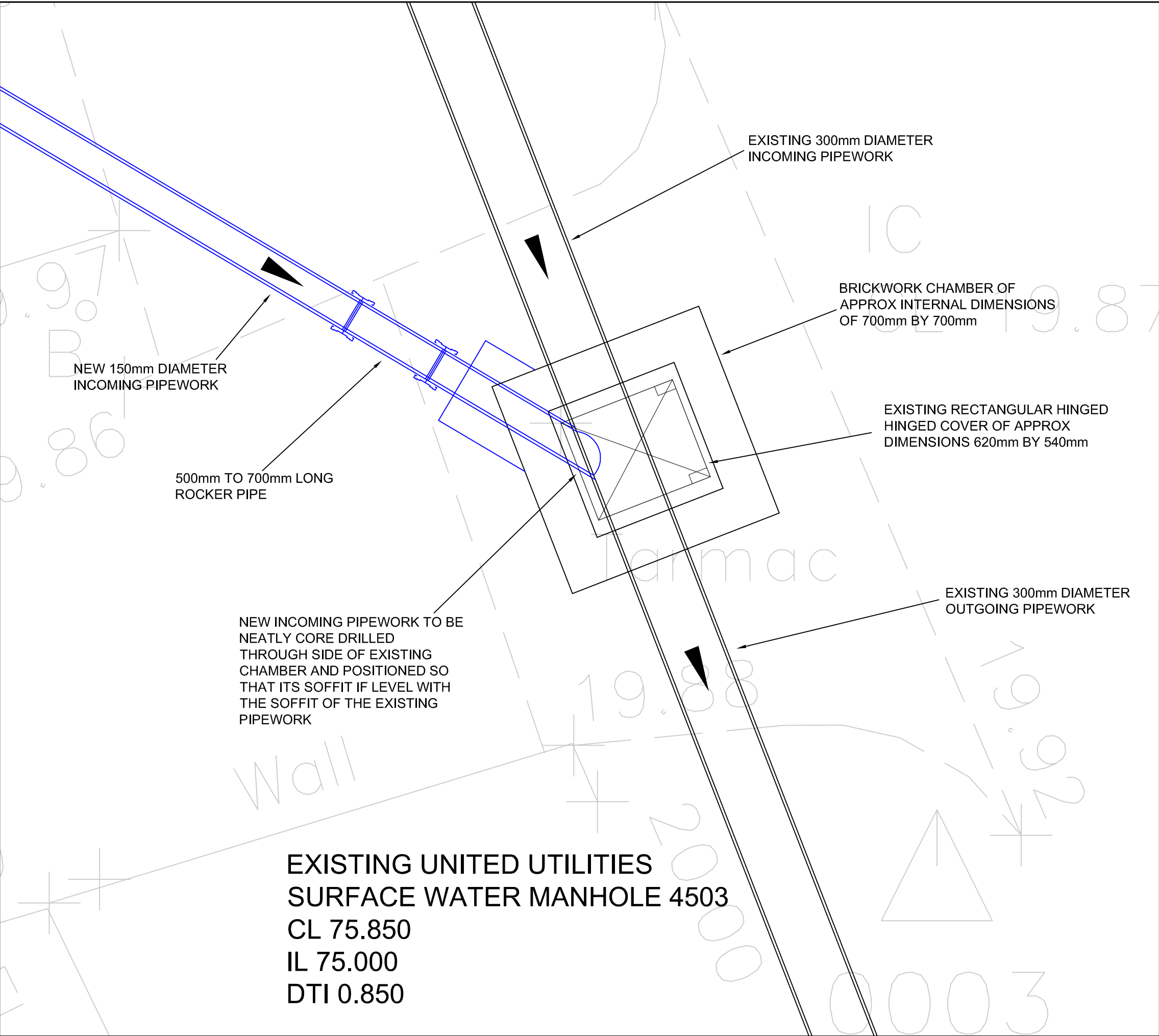
WML Job No.	Drawn	Checked	Date	Scale
9079	KPT	AL	JAN. 2020	1:100 AT A1

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Drawing No.	Project	Originator	Volume	Level	Type	Role	Number	Rev
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RECORD DRAWING



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- 4. THE CONTRACTOR SHALL INCORPORATE ALL THE REQUIREMENTS OF THE PRE-TENDER STAGE HEALTH & SAFETY PLAN.

RECORD DRAWING

R01	RECORD ISSUE.	13.8.21	KPT	AL
P01	PRELIMINARY ISSUE.	18.2.20	KPT	DB
Rev.	Amendment	Date	By	Chkd

Project	POMONA HOTEL SITE, GORTON
Client	JOHN SOUTHWORTH BUILDERS
Title	UNITED UTILITES SURFACE WATER MANHOLE CONNECTION DETAIL

Drawn KPT	Checked DB	Date FEB. 2020	Scale 1:20 AT A3
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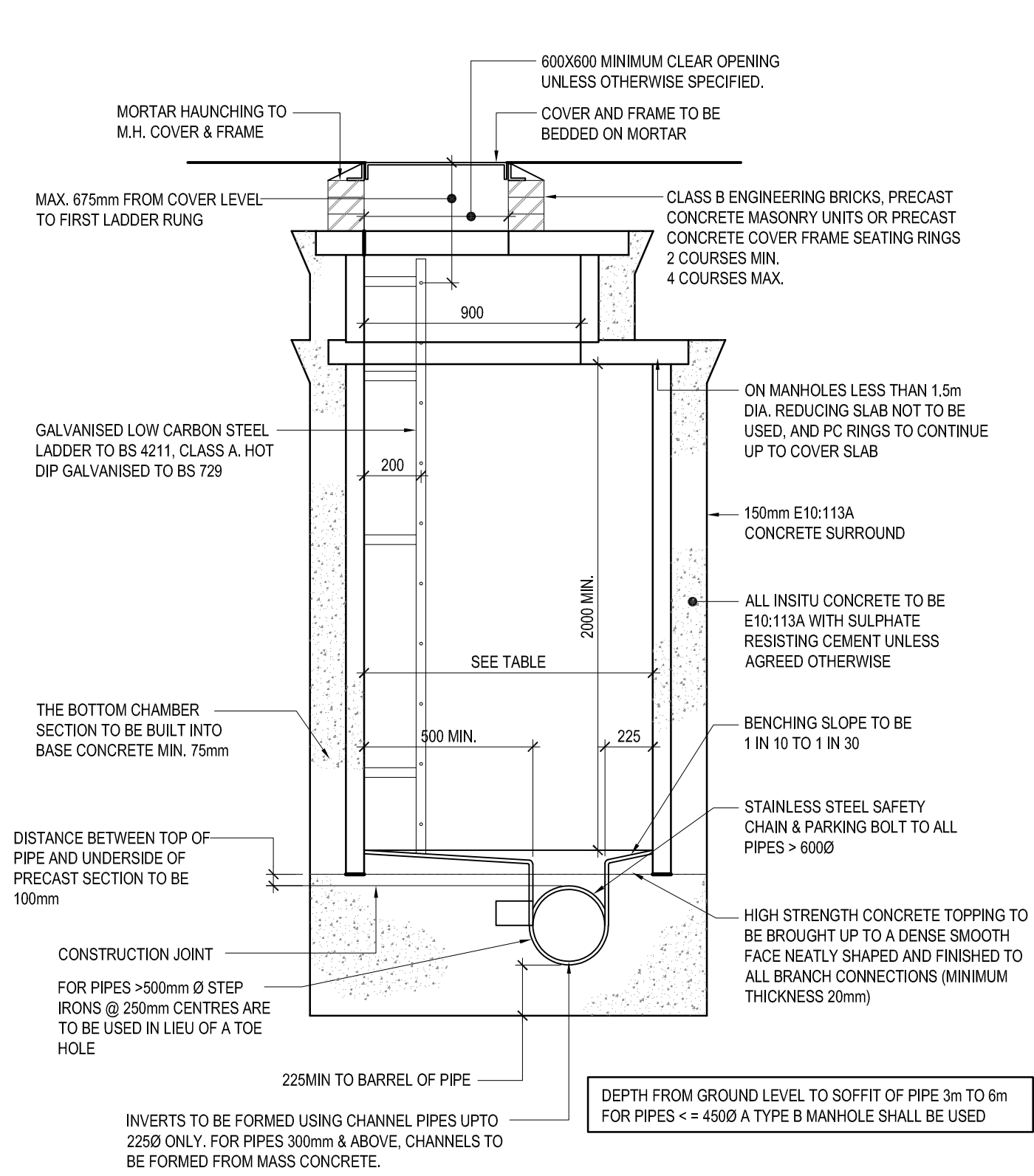
Job No.	9079	Drawing No.	1002 R01
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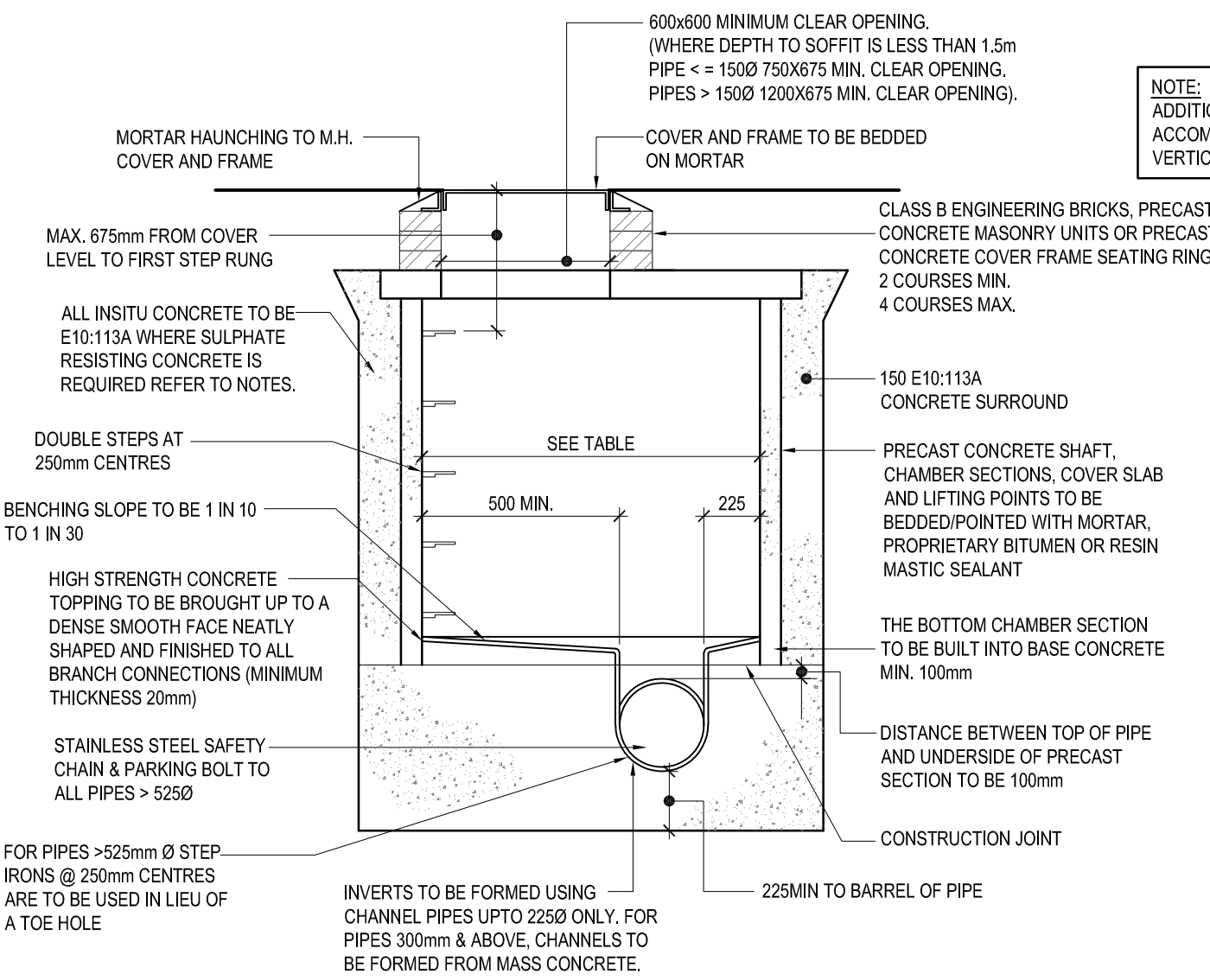
RESIDUAL RISK REGISTER -

REFER TO WML CIVIL / STRUCTURAL DESIGN RISK REGISTER IN ADDITION TO THE HAZARDS / RISKS NORMALLY ASSOCIATED WITH THE TYPE OF WORKS INDICATED ON THIS DRAWING. NOTE THE FOLLOWINGS:-



TYPICAL MANHOLE DETAIL TYPE A (SECTION)

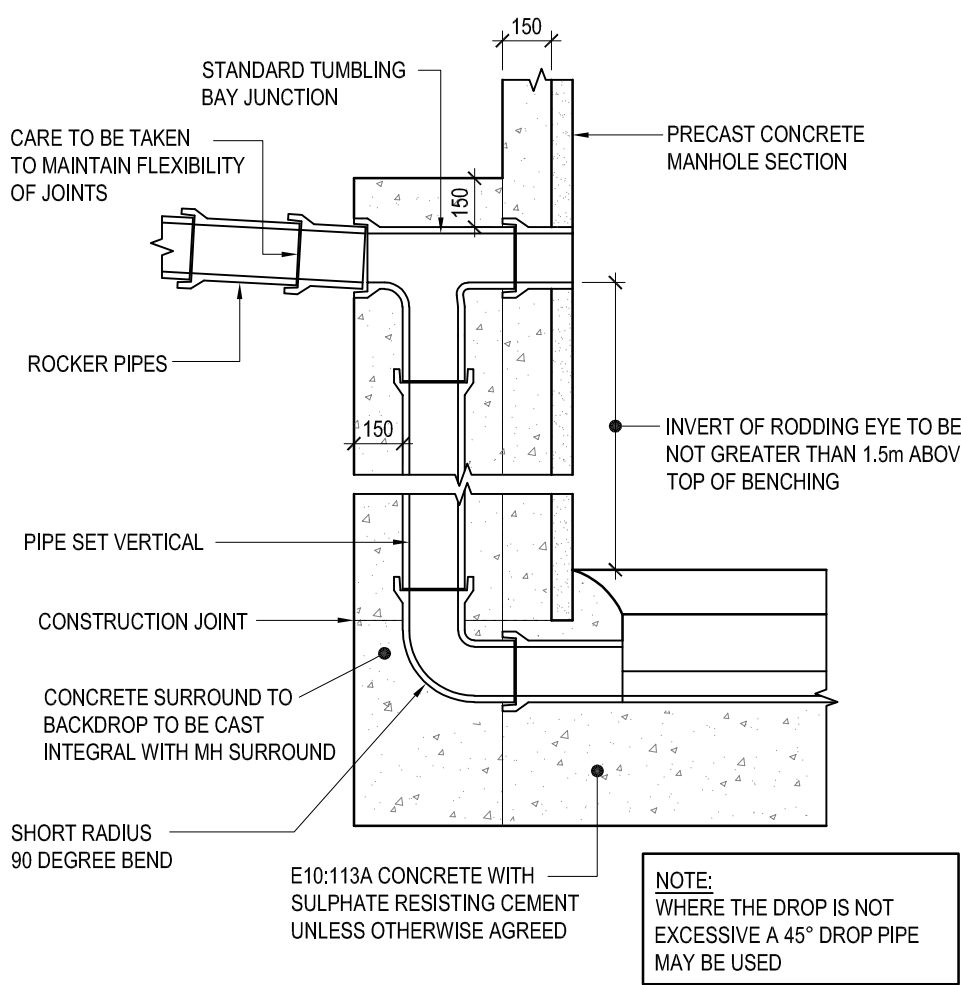
[SCALE 1:20]



DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	MIN. MANHOLE INTERNAL DIAMETER (mm)
<= 300mm (< 1.5M DEEP TO SOFFIT)	1200
> 300mm (< 1.5M DEEP TO SOFFIT)	THE LARGER OF 1800 OR (DN + 775)
<= 450mm	1200
> 450mm	THE LARGER OF 1800 OR (DN + 775)

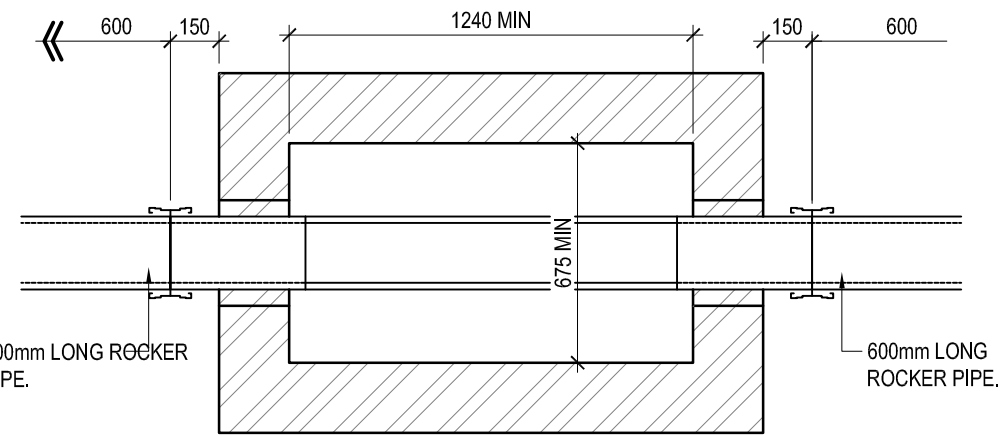
TYPICAL MANHOLE DETAIL TYPE B (SECTION)

[SCALE 1:20]

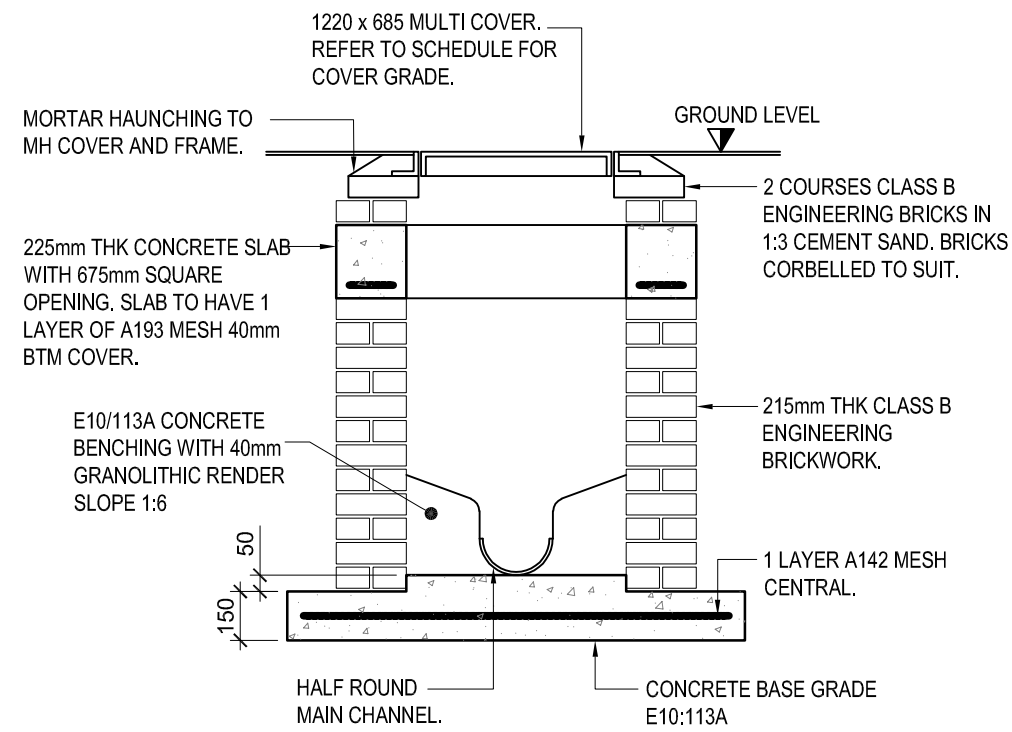


TYPICAL VERTICAL BACKDROP DETAIL

[SCALE 1:20]



PLAN SECTION

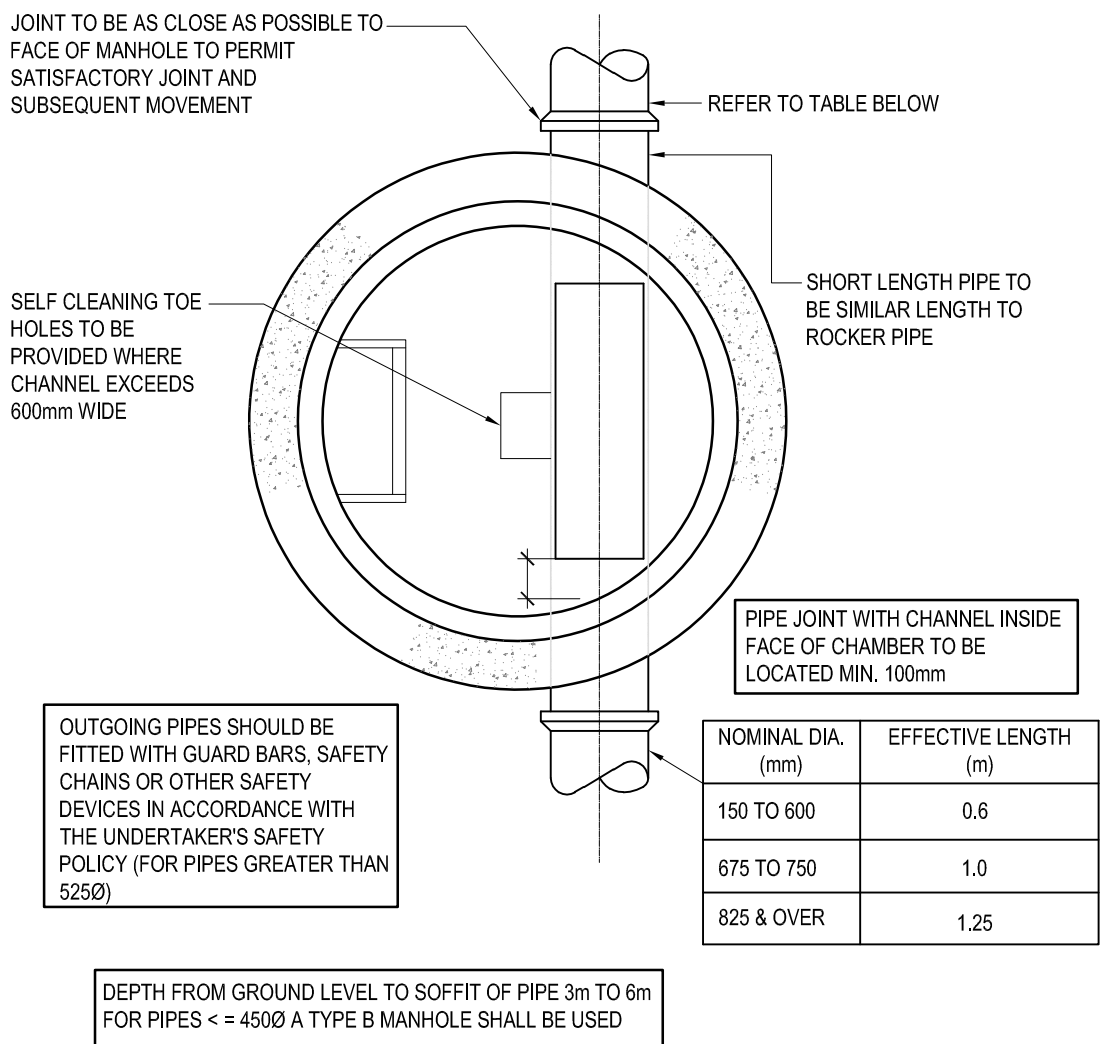


CROSS SECTION

BRICKWORK MANHOLE TYPE C DETAIL

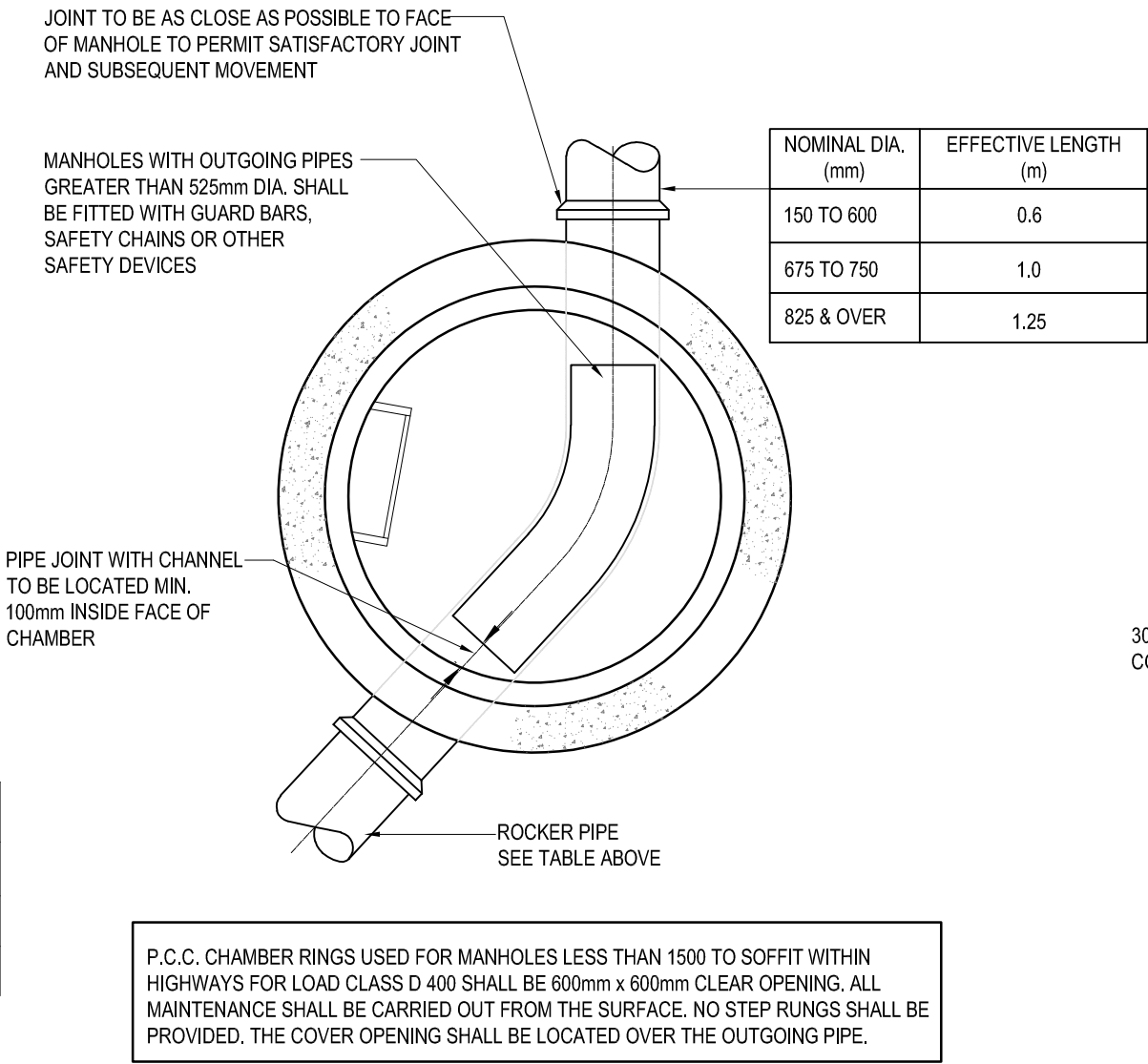
(DEPTH TO SOFFIT UP TO 1.5m)

[SCALE 1:20]



TYPICAL MANHOLE DETAIL TYPE A (PLAN)

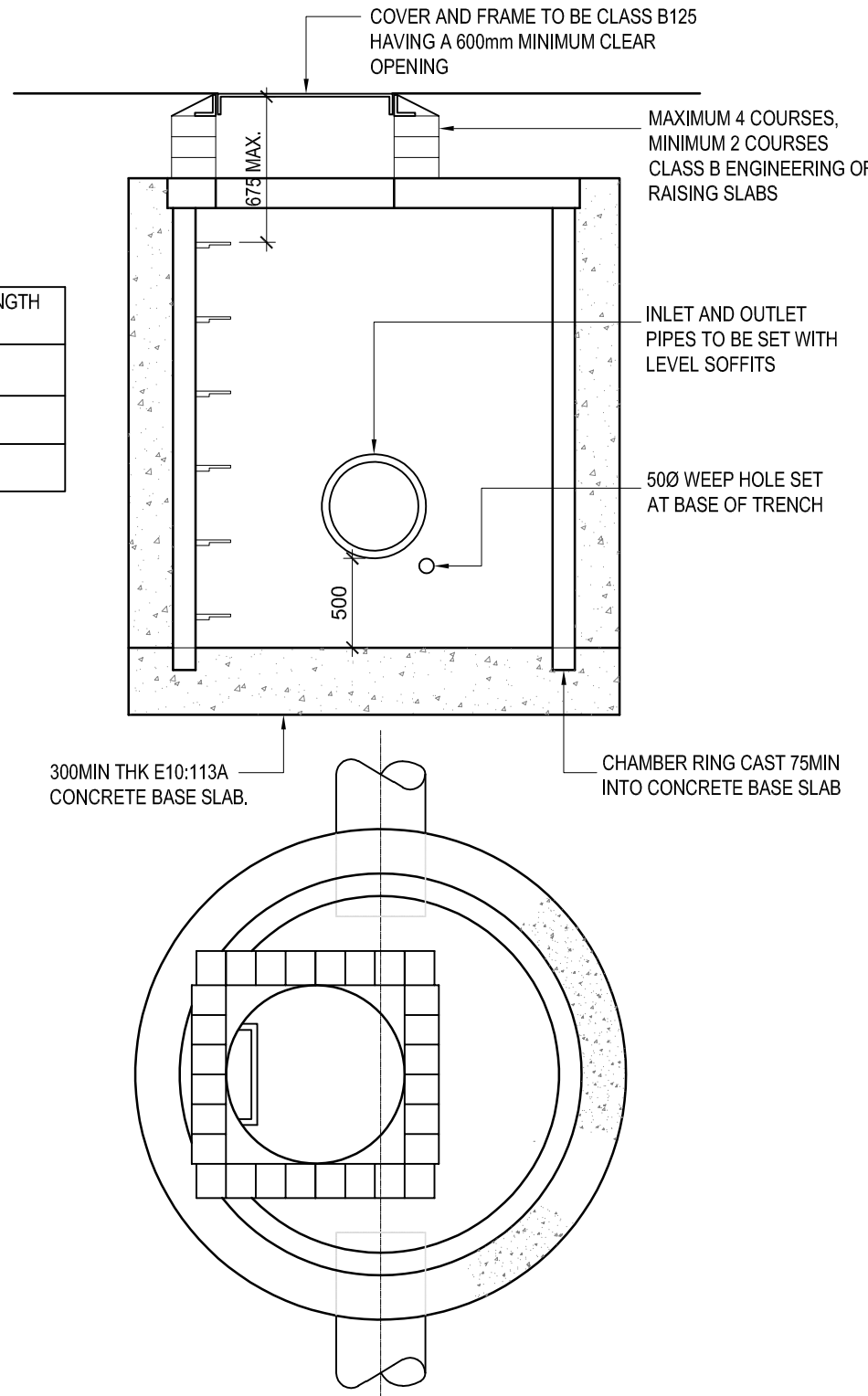
[SCALE 1:20]



TYPICAL MANHOLE DETAIL TYPE B (E/F)

DEPTH TO SOFFIT OF PIPE 1.5m* TO 3.0m

[SCALE 1:20]



TYPICAL CATCHPIT MANHOLE PLAN & SECTION

(CHAMBER CONSTRUCTION AS FOR PCC MANHOLES)

[SCALE 1:20]

RECORD DRAWING

R01	RECORD ISSUE.	13.08.21	KPT	AL
C01	CONSTRUCTION ISSUE.	16.07.20	KPT	AL
Rev.	Amendment	Date	By	Chkd

Project
POMONA HOTEL SITE, GORTON

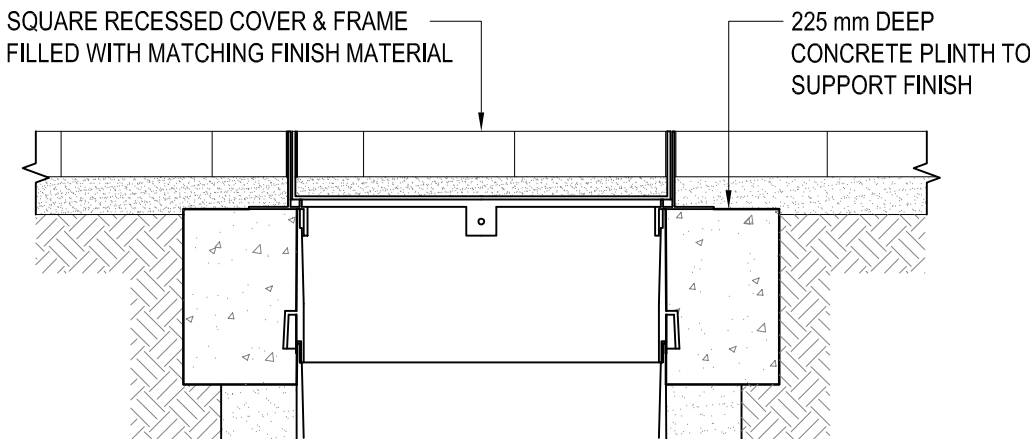
Client
JOHN SOUTHWORTH BUILDERS

Title
DRAINAGE LAYOUT

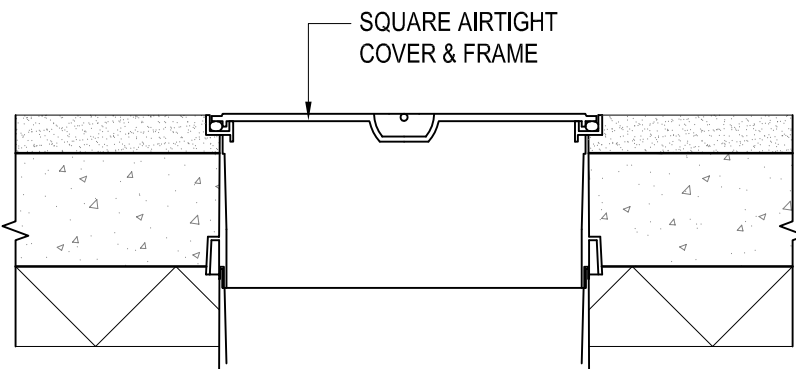
WML Job No.	Drawn	Checked	Date	Scale
9079	KPT	AL	JUNE. 2020	1:20 AT A1

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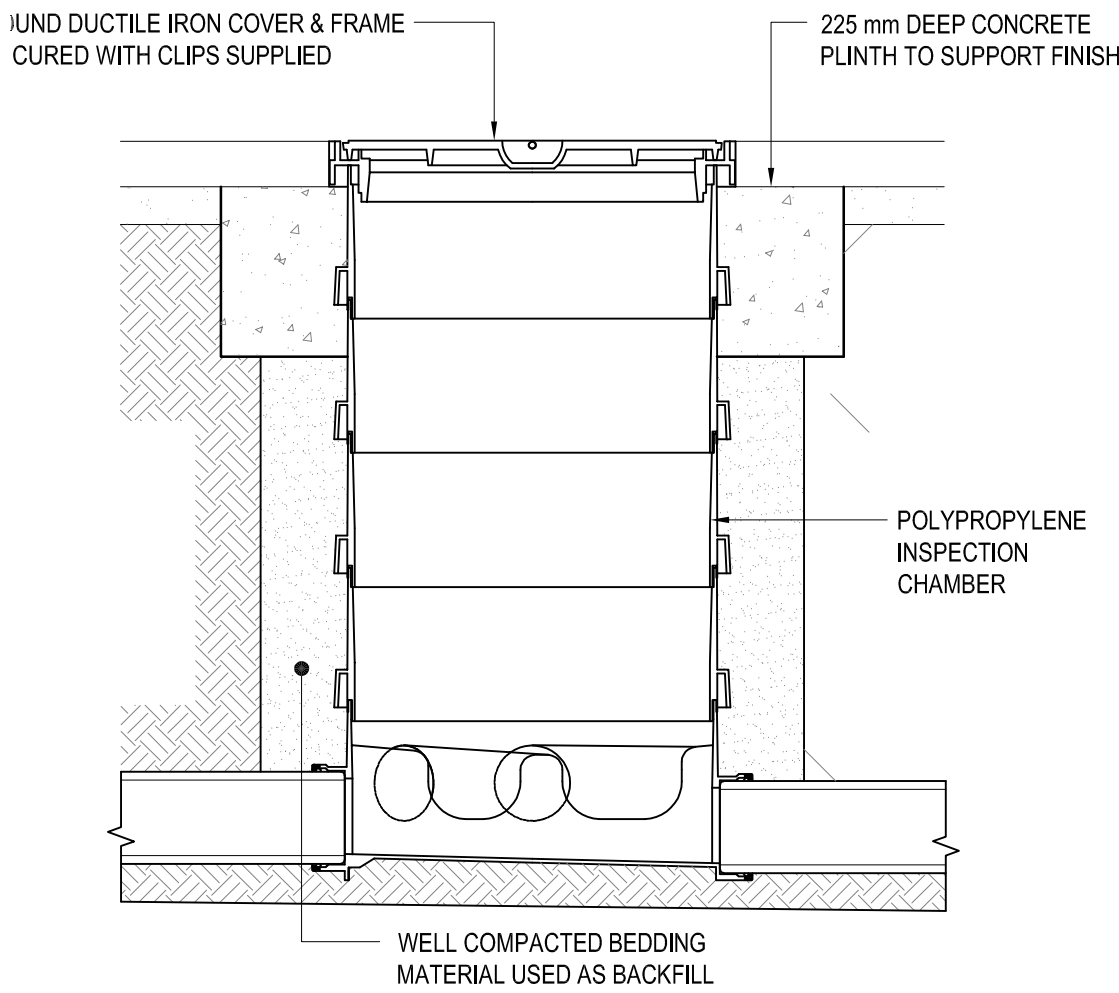
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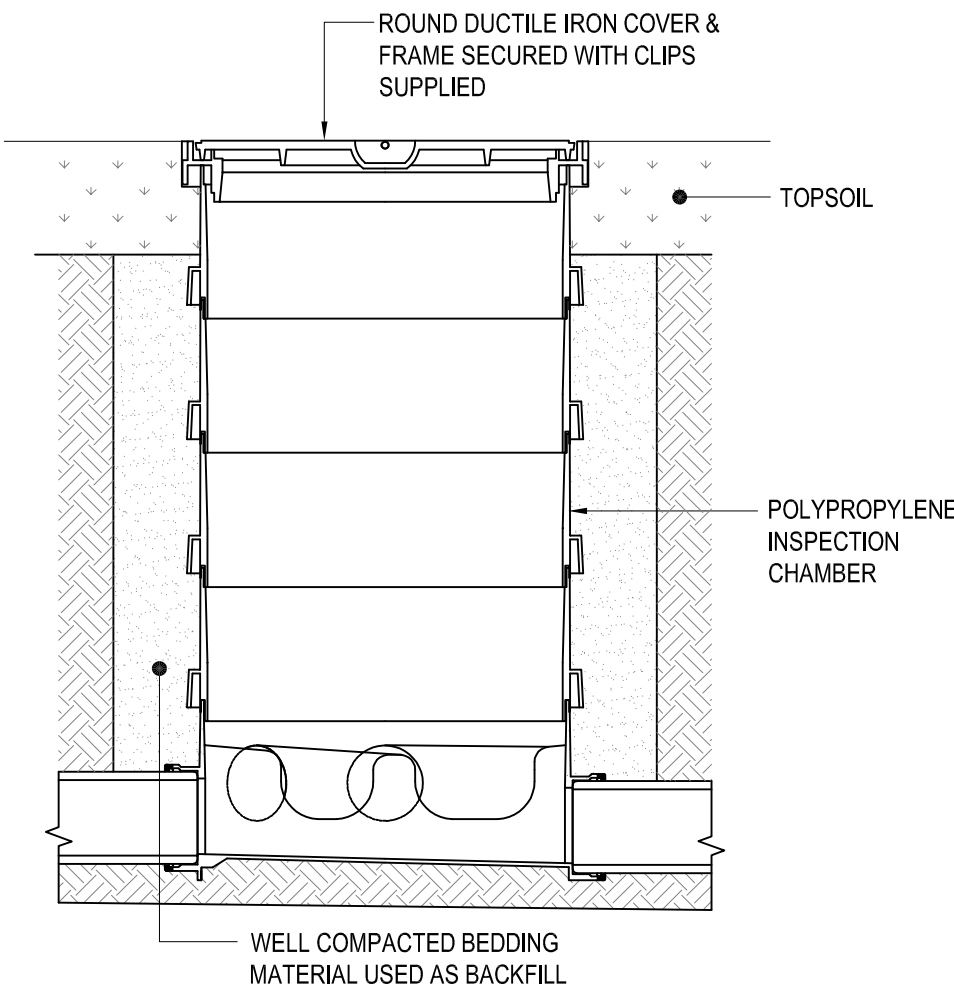
SITED IN DRIVEWAYS / HARD LANDSCAPED AREAS
WITH RECESSED COVER



SITED IN CONCRETE FLOOR SLAB

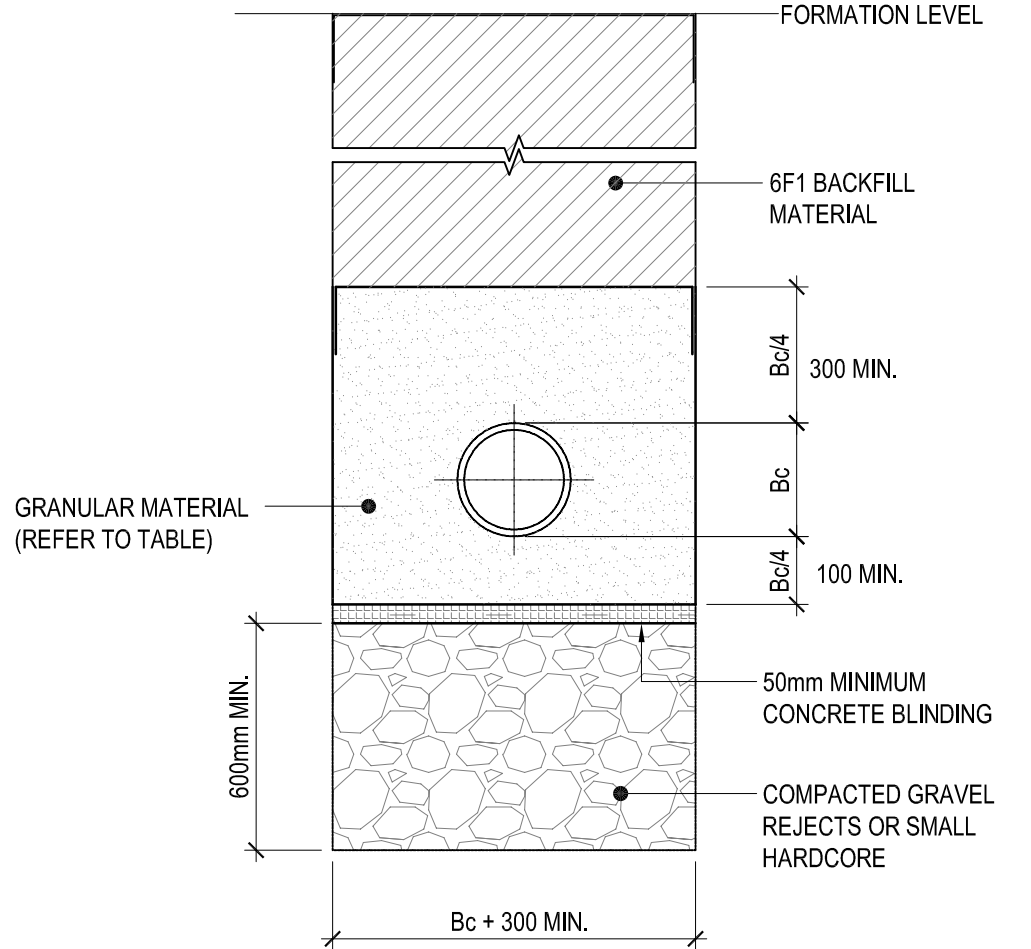


SITED IN DRIVEWAYS / HARD LANDSCAPED AREAS
WITH STANDARD ROUND COVER

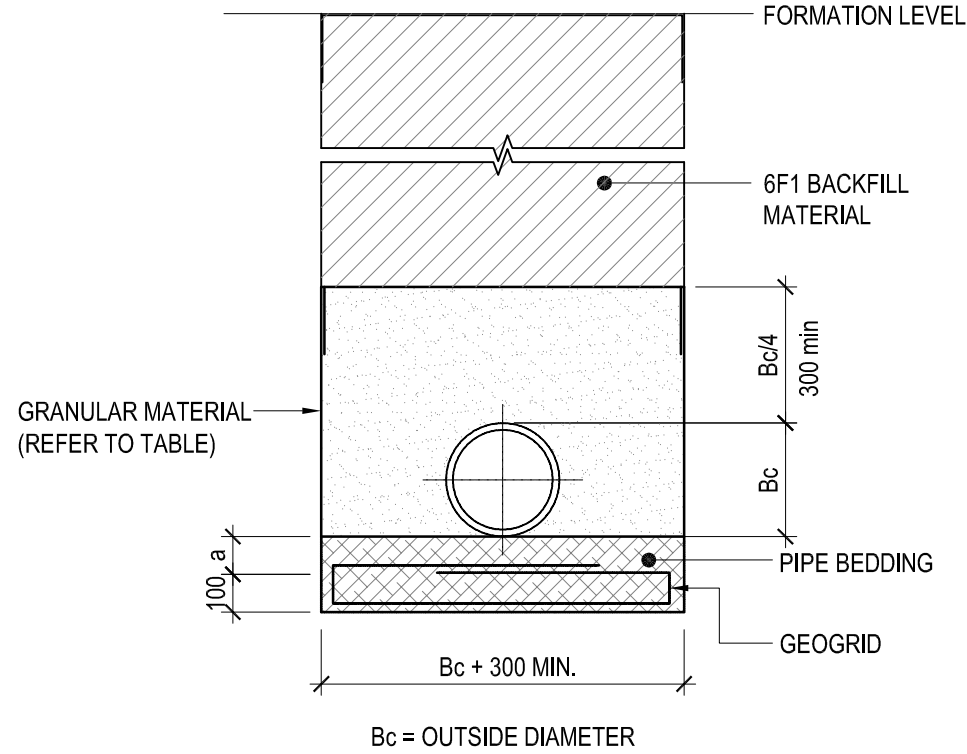


SITED IN SOFT LANDSCAPED AREAS WITH
STANDARD ROUND COVER

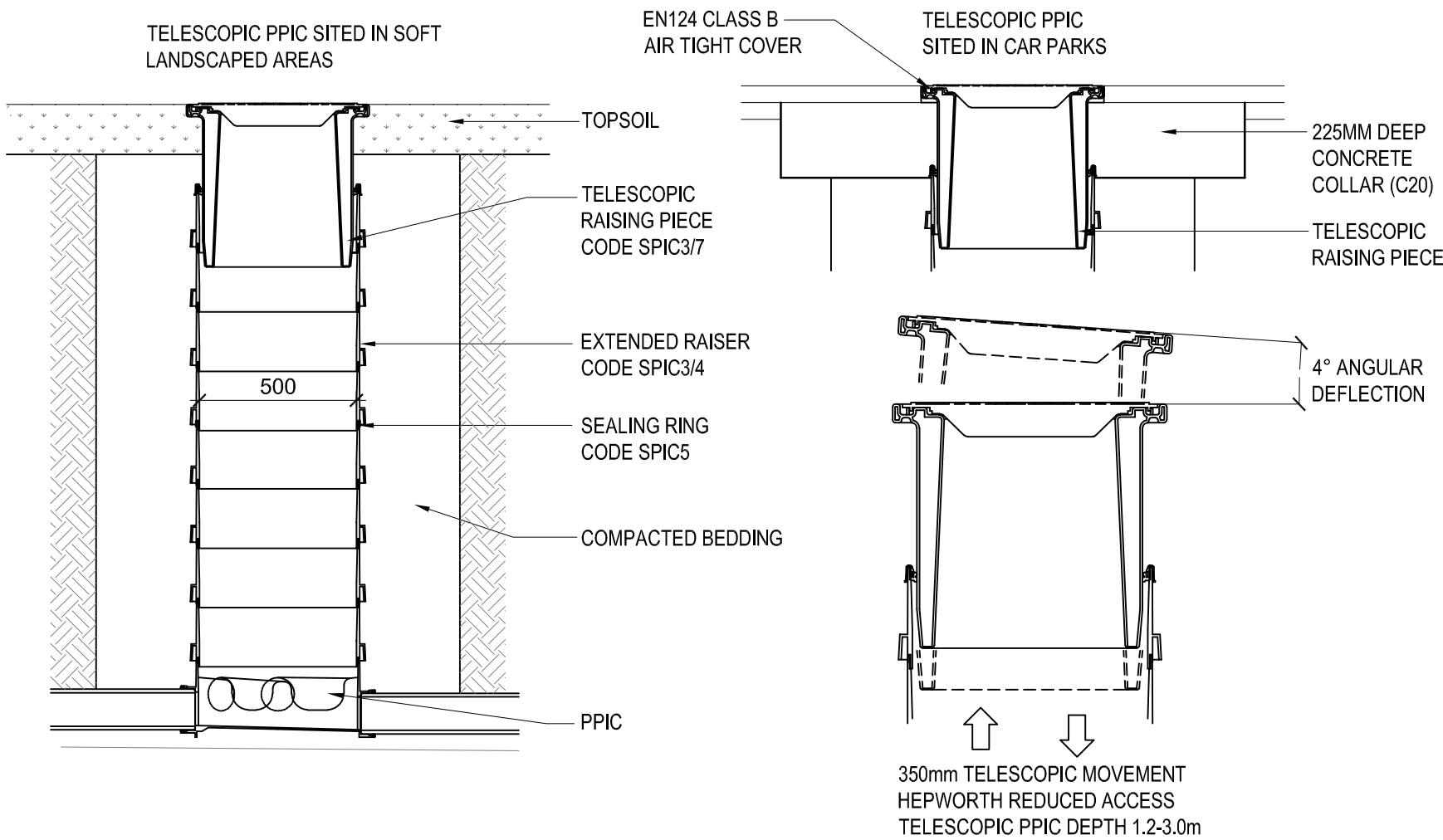
POLYPROPYLENE INSPECTION CHAMBER
INSTALLATION DETAIL (475Ø UPTO 1.2m DEE)
(HEPWORTH PRODUCTS)
[SCALE 1:20]



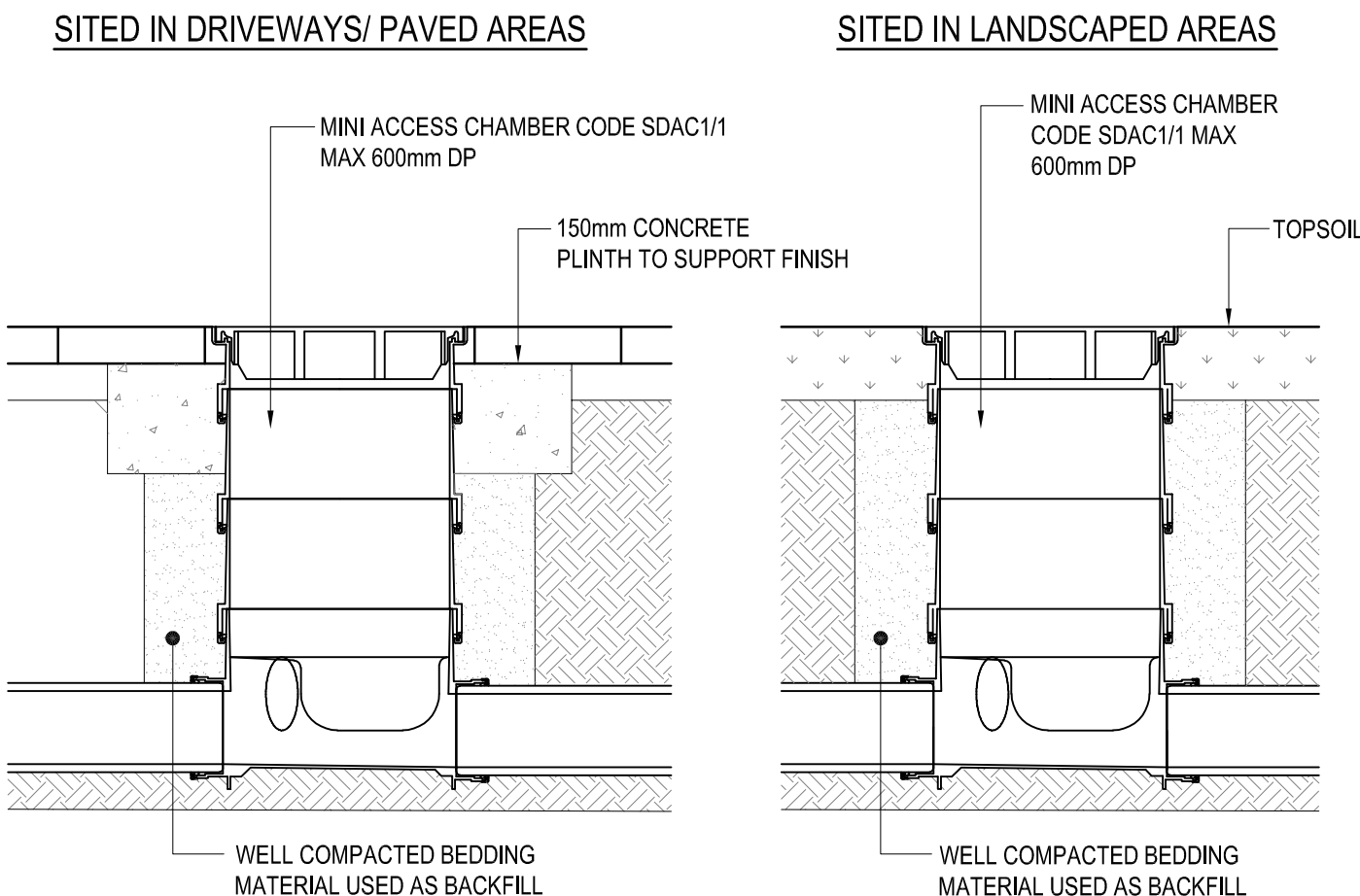
CLASS S BEDDING CONSTRUCTION
IN SOFT GROUND
[SCALE 1:20]



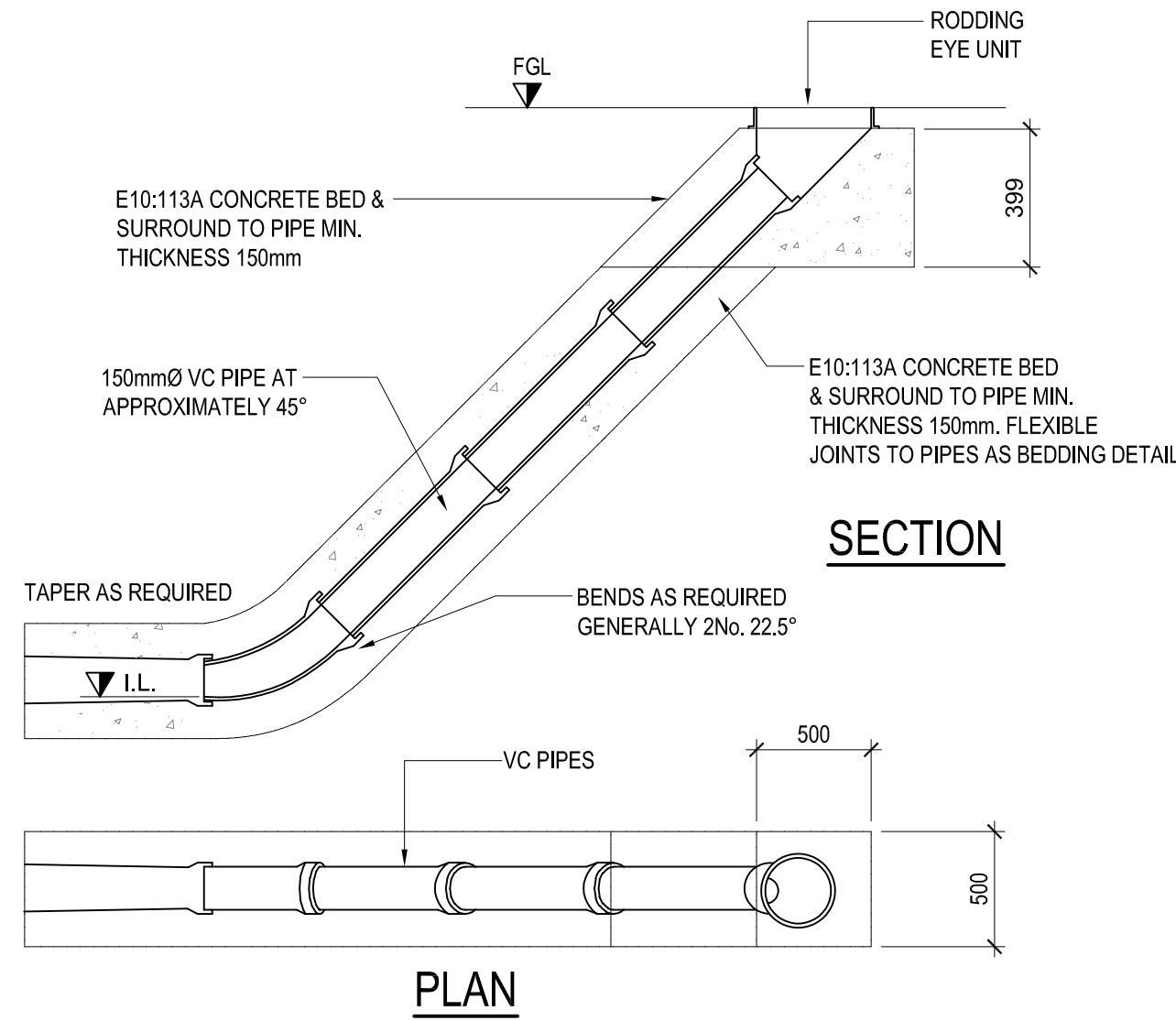
PIPELINE CONSTRUCTION IN WEAK
GROUND USING A GEOGRID
[SCALE 1:20]



HEPWORTH REDUCED ACCESS TELESCOPIC
PPIC (475Ø UPTO 3.0m DEEP)
(HEPWORTH PRODUCTS)
[SCALE 1:20]



MINI ACCESS CHAMBER INSTALLATION DETAIL
(300Ø MAX. DEPTH 600mm)
(HEPWORTH PRODUCTS)
[SCALE 1:20]



RODDING EYE DETAIL (PLAN & SECTION)
[SCALE 1:20]

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Project
POMONA HOTEL SITE, GORTON

Client
JOHN SOUTHWORTH BUILDERS

Title
DRAINAGE DETAILS SHEET 3

WML Job No.	Drawn	Checked	Date	Scale
9079	KPT	AL	JUNE. 2020	1:20 AT A1

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Drawing No.	Project	Originator	Volume	Level	Type	Role	Number	Rev
9079	- WML -	00	- XX -	DR	- C	-	1103	R01

APPENDIX B

Surface water drainage calculations

WML Consulting Ltd		Page 1
No. 8 Oak Green Stanley Green Business Park Earl Rd, Cheadle Hulme, SK8 6QL	9079 - POMONA SITE SURFACE WATER DRAINAGE CALCULATIONS	
Date JULY 2020 File 9079 - SW - 02.MDX	Designed by KPT Checked by AL	
Innovyze	Network 2014.1.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	100	Add Flow / Climate Change (%)	0
M5-60 (mm)	18.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.358	Maximum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	5	Min Design Depth for Optimisation (m)	1.200
Maximum Time of Concentration (mins)	30	Min Vel for Auto Design only (m/s)	1.00
Foul Sewage (l/s/ha)	0.000	Min Slope for Optimisation (1:X)	500
Volumetric Runoff Coeff.	0.750		

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.109	4-8	0.017

Total Area Contributing (ha) = 0.126

Total Pipe Volume (m³) = 1.696

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.000	11.000	0.110	100.0	0.009	5.00	0.0	0.600	o	150	
1.001	19.000	0.190	100.0	0.006	0.00	0.0	0.600	o	150	
1.002	6.000	0.060	100.0	0.006	0.00	0.0	0.600	o	150	
1.003	12.000	0.120	100.0	0.009	0.00	0.0	0.600	o	150	
1.004	12.000	0.120	100.0	0.070	0.00	0.0	0.600	o	150	
2.000	32.000	0.320	100.0	0.018	5.00	0.0	0.600	o	150	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	5.00	5.18	19.680	0.009	0.0	0.0	0.0	1.00	17.8	0.1
1.001	5.00	5.50	19.570	0.015	0.0	0.0	0.0	1.00	17.8	0.2
1.002	5.00	5.60	19.380	0.021	0.0	0.0	0.0	1.00	17.8	0.3
1.003	5.00	5.80	19.320	0.030	0.0	0.0	0.0	1.00	17.8	0.4
1.004	5.00	6.00	19.200	0.100	0.0	0.0	0.0	1.00	17.8	1.4
2.000	5.00	5.53	19.400	0.018	0.0	0.0	0.0	1.00	17.8	0.2

WML Consulting Ltd		Page 2
No. 8 Oak Green Stanley Green Business Park Earl Rd, Cheadle Hulme, SK8 6QL	9079 - POMONA SITE SURFACE WATER DRAINAGE CALCULATIONS	
Date JULY 2020 File 9079 - SW - 02.MDX	Designed by KPT Checked by AL	
Innovyze	Network 2014.1.1	

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.005	4.000	0.040	100.0	0.008	0.00	0.0	0.600	o	150	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.005	5.00	6.06	19.080	0.126	0.0	0.0	0.0	1.00	17.8	1.7

WML Consulting Ltd		Page 3
No. 8 Oak Green Stanley Green Business Park Earl Rd, Cheadle Hulme, SK8 6QL	9079 - POMONA SITE SURFACE WATER DRAINAGE CALCULATIONS	
Date JULY 2020 File 9079 - SW - 02.MDX	Designed by KPT Checked by AL	
Innovyze	Network 2014.1.1	

Online Controls for Storm

Hydro-Brake Optimum® Manhole: 9, DS/PN: 1.005, Volume (m³): 1.8

Unit Reference MD-SHE-0111-5000-0600-5000
Design Head (m) 0.600
Design Flow (l/s) 5.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Diameter (mm) 111
Invert Level (m) 19.080
Minimum Outlet Pipe Diameter (mm) 150
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.600	5.0
Flush-Flo™	0.192	5.0
Kick-Flo®	0.427	4.3
Mean Flow over Head Range	-	4.2

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.8	1.200	6.9	3.000	10.6	7.000	15.9
0.200	5.0	1.400	7.4	3.500	11.4	7.500	16.4
0.300	4.8	1.600	7.9	4.000	12.1	8.000	17.0
0.400	4.5	1.800	8.3	4.500	12.9	8.500	17.5
0.500	4.6	2.000	8.7	5.000	13.5	9.000	18.0
0.600	5.0	2.200	9.1	5.500	14.1	9.500	18.5
0.800	5.7	2.400	9.5	6.000	14.7		
1.000	6.3	2.600	9.9	6.500	15.3		

WML Consulting Ltd		Page 4																		
No. 8 Oak Green Stanley Green Business Park Earl Rd, Cheadle Hulme, SK8 6QL	9079 - POMONA SITE SURFACE WATER DRAINAGE CALCULATIONS																			
Date JULY 2020 File 9079 - SW - 02.MDX	Designed by KPT Checked by AL																			
Innovyze	Network 2014.1.1																			
Storage Structures for Storm Cellular Storage Manhole: 6, DS/PN: 1.004 Invert Level (m) 19.250 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.00000 <table><thead><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr></thead><tbody><tr><td>0.000</td><td>96.0</td><td>0.0</td><td>0.401</td><td>0.0</td><td>0.0</td></tr><tr><td>0.400</td><td>96.0</td><td>0.0</td><td></td><td></td><td></td></tr></tbody></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	96.0	0.0	0.401	0.0	0.0	0.400	96.0	0.0			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)															
0.000	96.0	0.0	0.401	0.0	0.0															
0.400	96.0	0.0																		
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Page 5

No. 8 Oak Green

Stanley Green Business Park

Earl Rd, Cheadle Hulme, SK8 6QL

Date JULY 2020

File 9079 - SW - 02.MDX

Innovyze

9079 - POMONA SITE

SURFACE WATER DRAINAGE

CALCULATIONS

Designed by KPT

Checked by AL

Network 2014.1.1

Micro Drainage

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)

for Storm

Simulation Criteria

Areal Reduction Factor 1.000

Additional Flow - % of Total Flow 0.000

Hot Start (mins) 0

MADD Factor * 10m³/ha Storage 2.000

Hot Start Level (mm) 0

Inlet Coefficient 0.800

Manhole Headloss Coeff (Global) 0.500

Flow per Person per Day (l/per/day) 0.000

Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0

Number of Storage Structures 1

Number of Online Controls 1

Number of Time/Area Diagrams 0

Number of Offline Controls 0

Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR

Ratio R 0.358

Region England and Wales Cv (Summer) 0.750

M5-60 (mm) 18.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0

DVD Status OFF

Analysis Timestep Fine

Inertia Status OFF

DTS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080

Return Period(s) (years) 1, 30, 100

Climate Change (%) 0, 0, 40

PN

Storm

Return Period

Climate Change

First X Surcharge

First Y Flood

First Z Overflow

O/F Act.

Lvl Exc.

1.000

15 Winter

1

0%

1.001

15 Winter

1

0%

1.002

15 Winter

1

0%

100/15 Winter

1.003

15 Winter

1

0%

100/15 Summer

1.004

15 Winter

1

0%

30/15 Summer

2.000

15 Winter

1

0%

100/15 Summer

1.005

15 Winter

1

0%

1/15 Summer

PN

US/MH Name

Water Level (m)

Surch'd Depth (m)

Flooded Volume (m³)

Flow / Cap.

O'flow (l/s)

Pipe Flow (l/s)

Status

1.000

1

19.706

-0.124

0.000

0.07

0.0

1.1

OK

1.001

2

19.602

-0.118

0.000

0.10

0.0

1.7

OK

1.002

4

19.419

-0.111

0.000

0.16

0.0

2.3

OK

1.003

5

19.365

-0.105

0.000

0.20

0.0

3.2

OK

1.004

6

19.278

-0.072

0.000

0.29

0.0

4.7

OK

2.000

8

19.436

-0.114

0.000

0.12

0.0

2.1

OK

1.005

9

19.263

0.033

0.000

0.40

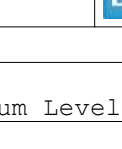
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SURCHARGED

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WML Consulting Ltd		Page 6	
No. 8 Oak Green		9079 - POMONA SITE	
Stanley Green Business Park		SURFACE WATER DRAINAGE	
Earl Rd, Cheadle Hulme, SK8 6QL		CALCULATIONS	
Date JULY 2020		Designed by KPT	
File 9079 - SW - 02.MDX		Checked by AL	
Innovyze		Network 2014.1.1	



30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.358
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	18.000	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)

Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080	Summer and Winter	
Return Period(s) (years)	1, 30, 100		
Climate Change (%)	0, 0, 40		

PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15	Winter	30	0%				
1.001	15	Winter	30	0%				
1.002	15	Winter	30	0%	100/15	Winter		
1.003	15	Winter	30	0%	100/15	Summer		
1.004	30	Winter	30	0%	30/15	Summer		
2.000	15	Winter	30	0%	100/15	Summer		
1.005	30	Winter	30	0%	1/15	Summer		

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	19.721	-0.109	0.000	0.17	0.0	2.6	OK
1.001	2	19.623	-0.097	0.000	0.27	0.0	4.5	OK
1.002	4	19.449	-0.081	0.000	0.43	0.0	6.3	OK
1.003	5	19.402	-0.068	0.000	0.56	0.0	9.1	OK
1.004	6	19.396	0.046	0.000	0.30	0.0	4.8	SURCHARGED
2.000	8	19.457	-0.093	0.000	0.30	0.0	5.2	OK
1.005	9	19.382	0.152	0.000	0.40	0.0	5.0	SURCHARGED

APPENDIX C

Photographic record of the installation















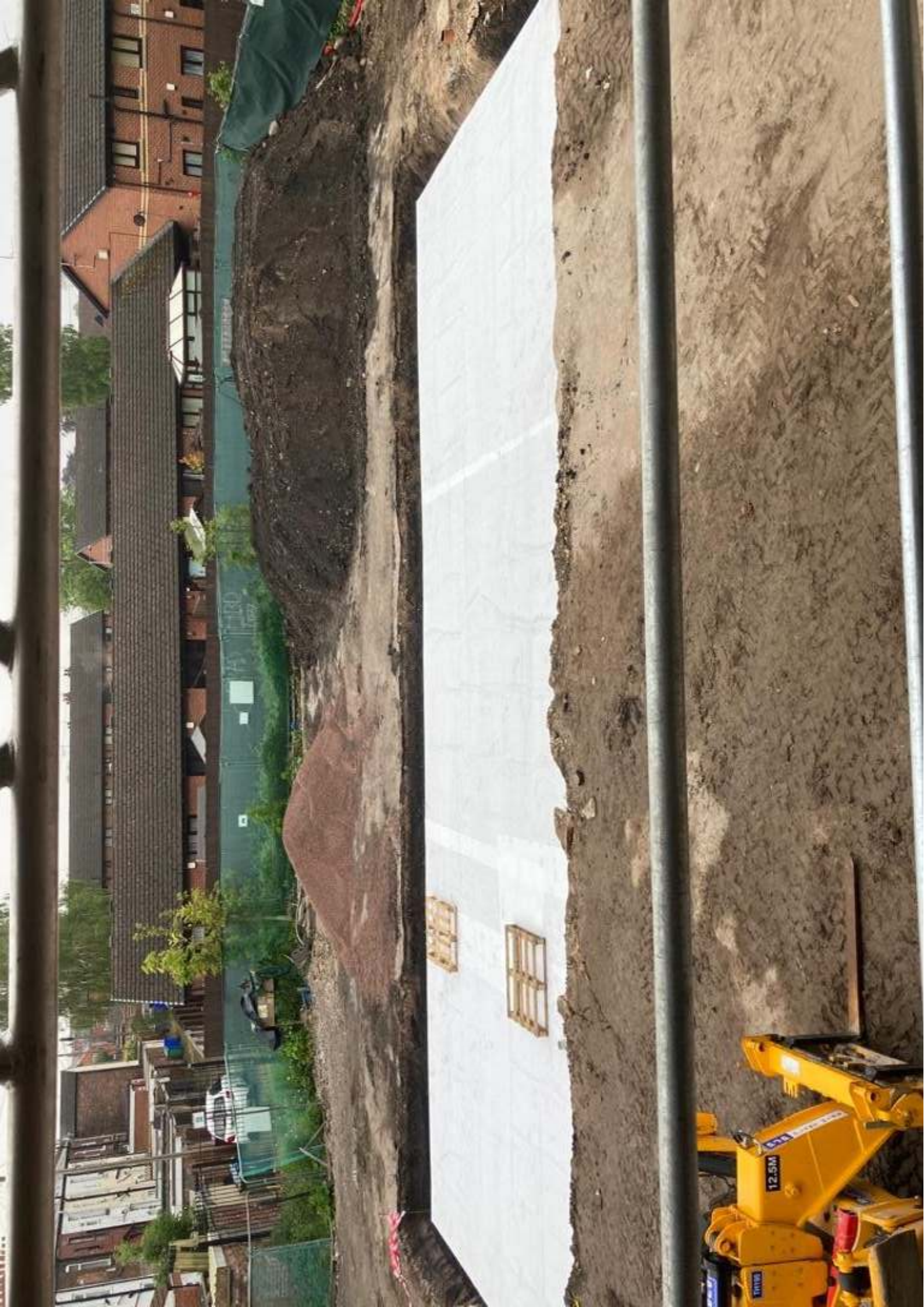




















Appendix D

United Utilities confirmation of approval

Your Reference	EC4960
Our Reference	4200029978
Date	28/07/2021

Dear Sir/Madam,

Location:	Pomona, Land Adjacent to 22 Reddish Lane, Manchester, M18 7JN
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I am writing to you in reference to your recent sewer connection application. I can confirm that the connection has been inspected on the 23rd July 2021 and is deemed as satisfactory.

Please accept this letter as our final approval for this sewer connection.

Should you need to enquire about this application please telephone our Customer Service Centre on 0345 072 6067 and quote the above reference number.

Yours Sincerely,

Louise Dack.
Developer Services and Metering

United Utilities Inspection Notice

This form is to confirm a new connection has been made
to an existing public sewer under Section 106 of the
Water Industry Act 1991



Water for the North West

Site details: Details of the site or premise that have been connected to the public sewer	
United Utilities notification reference (EC/NC/SC/MC)	EC4960
Site address	Pomona, Land Adjacent to 22 Reddish Lane, Manchester, M18 7JN
Development type	New property

Contractor Details	
Contractor name / Company Name	John Southworth Builders Ltd
Contractor Email Address	jacqueline@johnsouthworth.co.uk
Works Supervisor	Pete Cunningham
Confirm sewer 'log on' & 'log off' procedure followed	Yes ☒ No ☐

Principal Contractor Details (if applicable)	
Company name (if applicable)	
Name of Contact for Project	
Email Address	
Number of site inspections conducted by United Utilities	

Connection details	
Sewer connection type	Surface Water
Surface Water sewer pipesize diameter	150
Connecting into:	300 Existing Sewer Type Surface Water
Connecting to asset:	Manhole
Connection Location	Pomona, Land Adjacent to 22 Reddish Lane, Manchester, M18 7JN

Outcome	
Connection status	Satisfactory

Comments
I can confirm that the Surface Water Sewer connection is SATISFACTORY - 150 Surface Water Sewer connecting into the 300 Surface Water connected via Manhole in Pomona, Land Adjacent to 22 Reddish Lane, Manchester, M18 7JN

Approved: I confirm the sewer connection detailed above has been
satisfactorily completed and inspected

Developer Services Inspector	Marcus Jones
Date of Inspection	23/07/2021