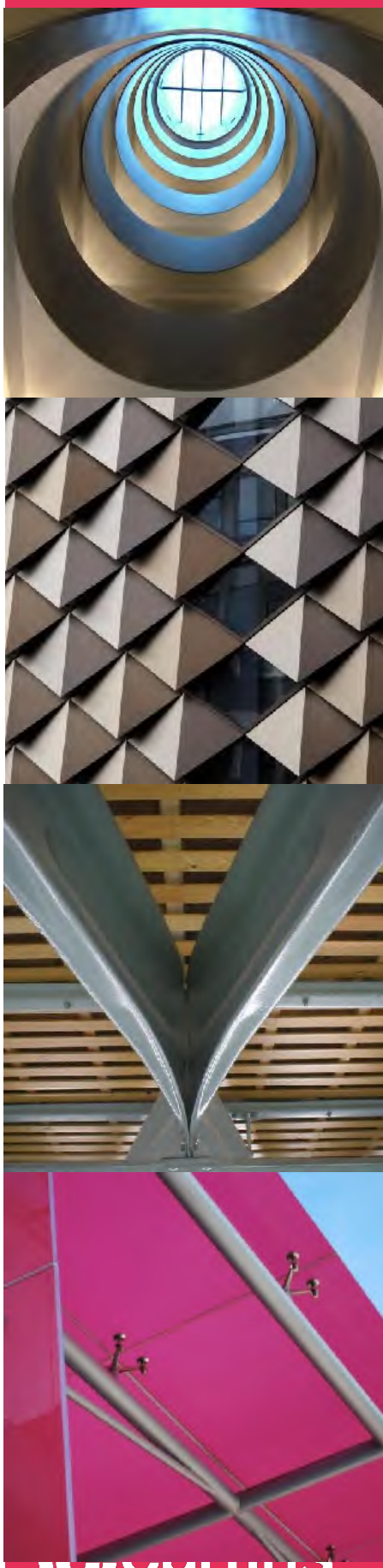

Globe and Simpson, St Johns

Drainage and SuDS Strategy

Curtins Ref: 068166-CUR-00-XX-RP-C-92003

Revision: V01

Issue Date: 16 February 2022

Client Name: Allied London

Site Address: Globe & Simpson, St Johns Quarter, Manchester

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Control Sheet

Rev	Description	Issued by	Checked	Date
V01	First Issue	CG	CG	16/02/2022

This report has been prepared for the sole benefit, use, and information for the client. The liability of Curtins with respect to the information contained in the report will not extend to any third party.

Author	*Signature*	*Date*
Chloé Grimsley BSc (Hons) Principal Engineer	C. Grimsley	16 February 2022

Reviewed	*Signature*	*Date*
Chloé Grimsley BSc (Hons) Principal Engineer	C. Grimsley	16 February 2022

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Appendix A

Proposed Site Layout

Appendix B

Masterplan Drainage Layout

Proposed Drainage Layout

Proposed Drainage Notes

Proposed Drainage Details Drawings

Appendix C

As Installed Drainage Photographs (Foul and Surface Water)

Appendix E

As Installed Drainage CCTV Survey (Surface Water)

Appendix F

Land Drainage Consent (Manchester City Council)

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1.0 Introduction

1.1 Project Background

1.1.1 A Flood Risk Assessment (FRA) and Surface Water Drainage Statement referenced AR/NAK/3233/JULY 2015 was prepared by ROC Consulting in August 2016 for the St Johns Masterplan. Subsequently, a Drainage Strategy, referenced SJQ099-CUR-00-XX-RP-C-92001-V02 has been prepared by Curtins Consulting in May 2019, which develops the masterplan drainage strategy.

1.1.2 Planning Permission for the development was granted under Application No 121721/FO//2018, subject to conditions.

1.1.3 Curtins have been appointed by Allied London to provide a Drainage and SuDS Strategy to accompany the below ground drainage design.

1.1.4 This report has currently been prepared based on completion of the building only, therefore the report does not currently validate the drainage collection and conveyance points within the external areas. The system has been designed to provide capacity for the catchments areas associated with the external works, but the external areas are currently noy yet installed. This report should be updated following completion of external works associated with this plot.

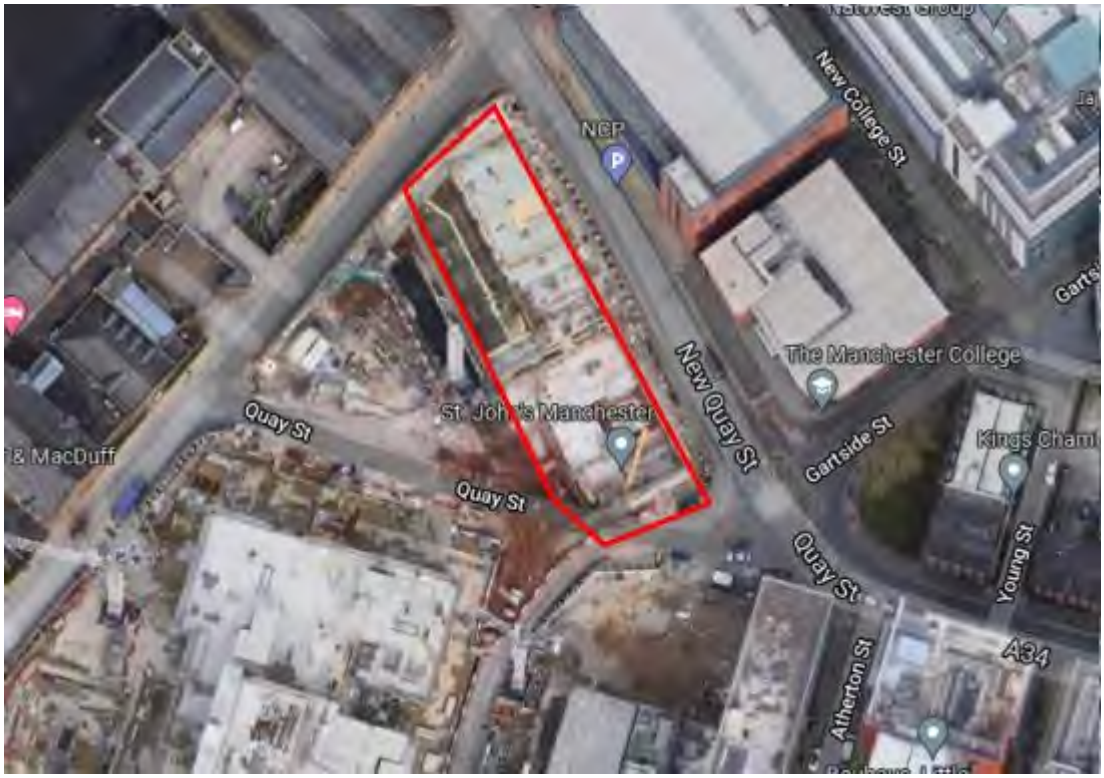
1.2 Proposed Development

1.2.1 The proposed development includes a 9-storey building comprising workspace (use Class B1) and flexible commercial workspace at ground level (Use Class A1, A3 and/or B1). Basement level comprises car parking and cycle parking and new public realm space around the building.

1.2.2 The proposed site plan is enclosed in **Appendix A.**

1.2.3 The site is located on New Quay Street in the city centre of Manchester, as shown at Figure 1 and forms part of the wider St Johns Masterplan.

Figure 1: Aerial Photograph (© Google 2022)



2.0 Drainage Strategy

2.1 Foul Water Drainage Strategy

2.1.1 A foul drainage strategy was prepared for the St Johns masterplan to set the principals of outfalls for each plot. The Masterplan strategy is referenced SJQ-099-CUR-XX-XX-DR-C-92550, can be found in Appendix B. The detailed design was developed based on the principals set out in the masterplan strategy.

2.1.2 A separate foul and surface water system is proposed for Globe and Simpson and will be retained as a private network. The foul drainage from the building will be connected to the existing public combined sewer adjacent to Quay Street, south-east of the site.

2.1.3 All drainage within basements are suspended below the ground floor slab and discharged to the private drainage network at high level. All drainage at basement level is drained to sumps and pumped into the gravity drainage system and is designed as part of the above ground drainage system by others.

2.2 Proposed Surface Water Drainage Strategy

2.2.1 Any new development site drainage should be designed in accordance with current best practice to provide adequate capacity not to flood for the critical 1 in 30-year storm event and flood water generated from up to the critical 1 in 100-year plus climate change storm event shall be constrained within the areas on site so not to cause damage to buildings, essential services or adjoining developments & services.

2.2.2 A surface water drainage strategy was prepared for the St Johns masterplan to set the principals of outfalls for each plot. The Masterplan strategy is referenced SJQ-099-CUR-XX-XX-DR-C-92550, can be found in Appendix B. The detailed design was developed based on the principals set out in the masterplan strategy.

2.2.3 A separate foul and surface water system is proposed for Globe and Simpson and will be retained as a private network. The surface water drainage from the building will be connected to the existing surface water drainage installed under the Manchester Goods Yard Plot (south of Globe and Simpson), which discharges below Water Street and into the Canal Basin west of Water Street.

2.2.4 The Land Drainage Consent for the Outfall Constructed as part of the site surface water discharge is enclosed in Appendix E.

2.2.5 Levels should be designed to fall away from buildings. An overland flow plan will be provided following receipt of final design and external levels.

3.0 SuDS/Drainage Verification

3.1.1 The Verification section has been developed with reference to the drainage design details and philosophy provided in section 3 of this report. Manchester City Council requirements are to verify the installation of the SuDS/Drainage element of the design to confirm by Photographic record that this has been installed

3.1.2 **The report should be updated following completion of the external works areas and drainage associated with this plot.**

3.1.3 The proposals do not include any SuDS features within this plot. The drainage system for this plot includes traditional pipework, chambers, gullies and channels. Photographic record of the below ground drainage is enclosed in Appendix C.

3.1.4 The CCTV Survey for the surface water drainage for this plot is enclosed in Appendix D.

3.1.5 The CCTV Survey for the foul water drainage for this po=lot should be provided once available to confirm satisfactory condition.

4.0 Maintenance

4.1.1 All drainage within the site will be maintained by the land owner as a private network. A suitable maintenance strategy should be adopted to ensure the drainage network is cleaned regularly and the routine maintenance and cleansing regime should be documented.

4.1.2 This section is intended to give an overview of the operation and maintenance for the drainage features included with the drainage strategy and in relation to typical details. Where proprietary products are specified, the manufacturer's instructions and recommendations should be followed in priority to this document unless specifically noted otherwise due to project constraints.

4.1.3 The recommended operations and frequencies are typical only and should be more frequent initially to ensure that there are no unforeseen issues with the operation and then adjusted to suit the site requirements.

4.1.4 It is recommended that the drainage system is inspected as a minimum twice a year, with the system also being inspected after any major storm event. Significant sediment deposition is likely in areas used for storage, so a post clean-up operation may be required including the removal of litter, vegetation, sewerage debris and larger objects.

4.1.5 The surface water network has been designed to accommodate the 1 in 100-year storm rainfall event plus an allowance for climate change particular to the requirements of the site. It may be that the exceedance flows above the 1 in 30-year storm rainfall event are stored within the site partially above ground, on non-habitable external landscaping, parking or other space. As the flows are generally being attenuated on site and within SuDs features there will be a period of time after storm events where the network is still partially or fully surcharged and is draining down. Where this surcharging is still present after 48hrs appropriate action should be taken as noted in this section.

4.2 Components

4.2.1 The following components have been included within the drainage design for the proposed development:

- Inspection, Manhole and Catchpit Chambers
- Pipes
- Gullies / Sump, Outlet and Access Units **(to be installed)**
- Linear Slot Drainage **(to be installed)**

4.2.2 The maintenance strategy should be adopted to ensure the drainage network is cleaned regularly and the routine maintenance and cleansing regime should be documented.

4.2.3 Maintenance of the drainage network will be the responsibility of an on-site facilities management team.

4.2.4 The maintenance of the drainage network outside of the Ownership Boundary and any public sewer assets will be the responsibility of Manchester City Council and United Utilities.

4.2.5 The current completion date for the development is unknown. The maintenance scheduling should begin from the completion date.

4.2.6 It is recommended that the drainage system is inspected as a minimum twice a year, with the system also being inspected after any major storm event.

4.2.7 Significant sediment deposition is likely in areas used for storage, so a post clean-up operation may be required including the removal of litter, vegetation, sewerage debris and larger objects.

4.2.8 Long-term management practices include monthly sweeping of external paved areas. The sweeping program will remove sand and contaminants directly from paved surfaces before they become mobilised during storm events and transported to the drainage system.

4.2.9 During the winter months, drainage features such as gullies and channels should be cleared of ice, snow, debris or litter

4.2.10 A copy of the final construction drainage layout should be provided in the final Operations and Maintenance Manual. Reference should be made to the proposed drainage layout: Curtins drawing SJQ-102-CUR-00-XX-DR-C-92500.

4.3 Inspection and Manhole Chambers

4.3.1 The locations of the chambers are indicated on Curtins drainage drawing SJQ-102-CUR-00-XX-DR-C-92500.

4.3.2 Access points have been located at the head of each run, at a change in direction and at a change of pipe size in accordance with Building Regulations Part H.

4.3.3 The appropriate barriers and signage should be installed during any opening of manholes to warn pedestrians.

4.3.4 Existing manholes are subject to existing access procedures. Typically chambers with a minimum working space of 900mm can be accessed by personnel; however, a winch must be used. Where 1050mm of working space is provided, manholes should be accessed using steps and where 1200mm working space is provided; manholes should be accessed using ladders, this is in accordance with Building Regulations Part H.

4.3.5 When accessing chambers, the latest Health and Safety legislation should be adhered to.

4.3.6 The appropriate health and safety equipment must be used when accessing manholes. Confined space certificates must be held by any personnel entering a manhole and the appropriate permits should be obtained from the Facilities Maintenance Manager prior to any access.

4.3.7 Sediment\material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas.

Maintenance Schedule	**Required Action**	**Frequency**
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection should be provided as post construction CCTV survey.	N/A
	Inspect for evidence of poor operation via water level in chambers. If required take remedial action.	3-monthly, 48 hours after large storms.
Occasional maintenance	Check and remove large vegetation growth near pipe runs.	6 monthly
Remedial actions	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.

	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required If above does not improve performance.

4.4 Pipes

4.4.1 The locations of the pipes are indicated on Curtins drainage drawing SJQ-102-CUR-00-XX-DR-C-92500. Pipes can be cleaned using drain cleaning rods or drain cleaning jets, accessed from inspection chambers and manholes.

Maintenance Schedule	**Required Action**	**Frequency**
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection should be provided as post construction CCTV survey.	N/A
	Inspect for evidence of poor operation via water level in chambers. If required take remedial action.	3-monthly, 48 hours after large storms.
Occasional maintenance	Check and remove large vegetation growth near pipe runs.	6 monthly
Remedial actions	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required If above does not improve performance.

4.5 Gullies / Sump, Outlet and Access Units

4.5.1 The locations of the gullies or sump outlet units are indicated on Curtins drainage drawing SJQ-102-CUR-00-XX-DR-C-92500.

4.5.2 Gullies and sump outlet units installed have removable covers to allow cleaning and clearing of debris and silt. The appropriate barriers and signage should be installed during any opening of gullies to warn pedestrians.

4.5.3 Sediment/material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas.

4.6 Linear Slot Drainage

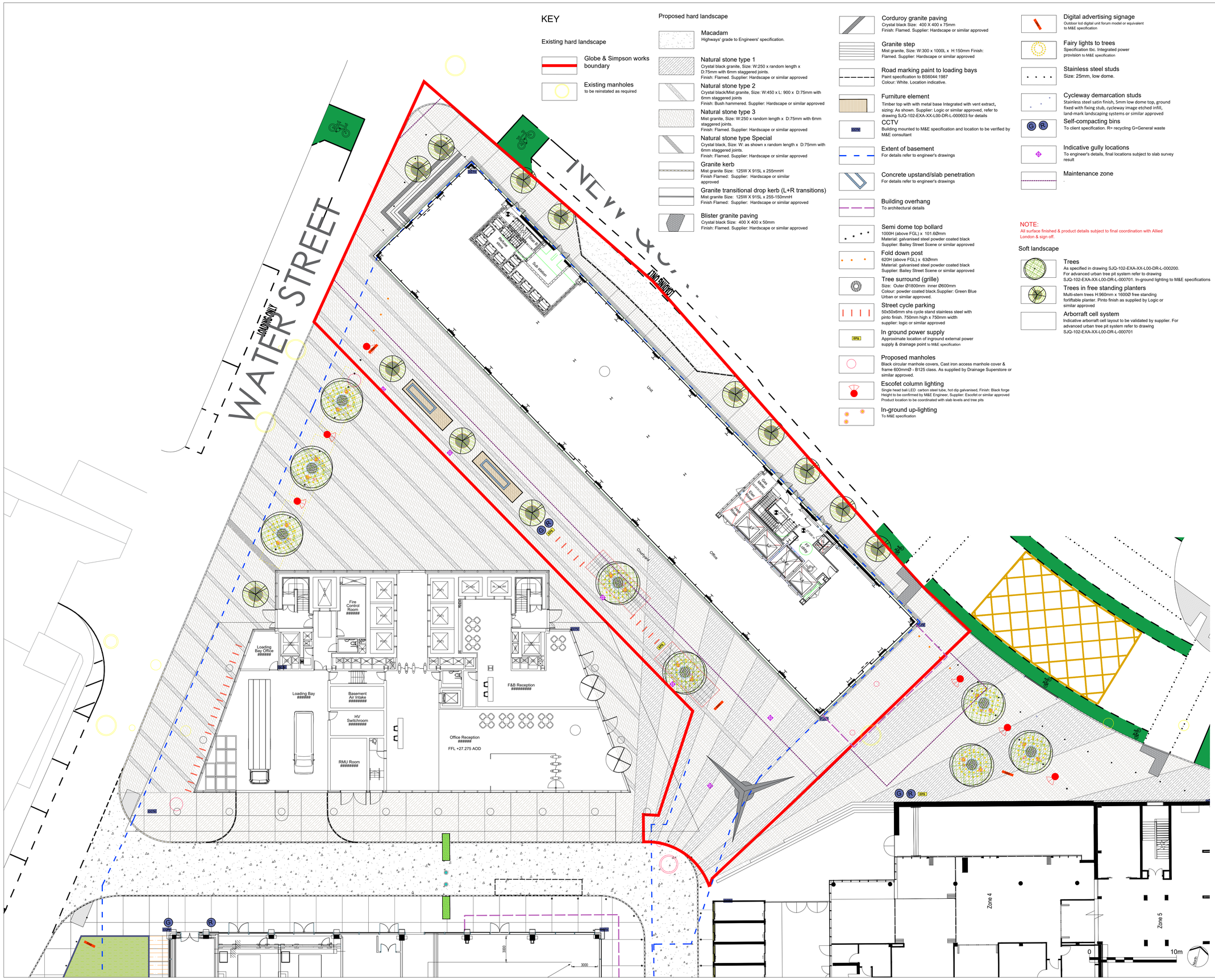
4.6.1 Linear channel drainage systems should be inspected and cleaned in accordance with the manufacturer's maintenance guide.

4.6.2 Outlet units can be cleaned through the use of a high-pressure hose; this can be fed into the channel system through access units strategically placed along the channel run. The throat section of channel units should be kept clear at all times to ensure uninterrupted flow of surface water into the drainage channel and any debris within the throat should be removed.

4.6.3 Manufacturers details will be included once product selection confirmed.

Appendix A

Proposed Site Layout



KEY

Existing hard landscape

- Globe & Simpson works boundary
- Existing manholes to be reinstated as required

Proposed hard landscape

- **Macadam** — Highways' grade to Engineers' specification.
- **Natural stone type 1** — Crystal black granite, Size: W:250 x random length x D:75mm with 6mm staggered joints. Finish: Flamed. Supplier: Hardscape or similar approved
- **Natural stone type 2** — Crystal black/Mist granite, Size: W:450 x L: 900 x D:75mm with 6mm staggered joints. Finish: Bush hammered. Supplier: Hardscape or similar approved
- **Natural stone type 3** — Mist granite, Size: W:250 x random length x D:75mm with 6mm staggered joints. Finish: Flamed. Supplier: Hardscape or similar approved
- **Natural stone type Special** — Crystal black, Size: W: as shown x random length x D:75mm with 6mm staggered joints. Finish: Flamed. Supplier: Hardscape or similar approved
- **Granite kerb** — Mist granite Size: 125W X 915L x 255mmH. Finish Flamed: Supplier: Hardscape or similar approved
- **Granite transitional drop kerb (L+R transitions)** — Mist granite Size: 125W X 915L x 255-150mmH. Finish Flamed: Supplier: Hardscape or similar approved
- **Blister granite paving** — Crystal black Size: 400 X 400 x 50mm. Finish: Flamed. Supplier: Hardscape or similar approved
- **Corduroy granite paving** — Crystal black Size: 400 X 400 x 75mm. Finish: Flamed. Supplier: Hardscape or similar approved
- **Granite step** — Mist granite, Size: W:300 x 1000L x H:150mm Finish: Flamed. Supplier: Hardscape or similar approved
- **Road marking paint to loading bays** — Paint specification to BS6044:1987. Colour: White. Location indicative.
- **Furniture element** — Timber top with with metal base Integrated with vent extract, sizing: As shown. Supplier: Logic or similar approved, refer to drawing SJQ-102-EXA-XX-L00-DR-L-000603 for details
- **CCTV** — Building mounted to M&E specification and location to be verified by M&E consultant
- **Extent of basement** — For details refer to engineer's drawings
- **Concrete upstand/slab penetration** — For details refer to engineer's drawings
- **Building overhang** — To architectural details
- **Semi dome top bollard** — 1000H (above FGL) x 101.6Ødmm. Material: galvanised steel powder coated black. Supplier: Bailey Street Scene or similar approved
- **Fold down post** — 620H (above FGL) x 63Ødmm. Material: galvanised steel powder coated black. Supplier: Bailey Street Scene or similar approved
- **Tree surround (grille)** — Size: Outer Ø1800mm inner Ø600mm. Colour: powder coated black.Supplier: Green Blue Urban or similar approved.
- **Street cycle parking** — 50x50x6mm shs cycle stand stainless steel with pinto finish. 750mm high x 750mm width. supplier: logic or similar approved
- **In ground power supply** — Approximate location of inground external power supply & drainage point to M&E specification
- **Proposed manholes** — Black circular manhole covers, Cast iron access manhole cover & frame 600mmØ - B125 class. As supplied by Drainage Superstore or similar approved.
- **Escofet column lighting** — Single head bali LED carbon steel tube, hot dip galvanised, Finish: Black forge. Height to be confirmed by M&E Engineer, Supplier: Escofet or similar approved. Product location to be coordinated with slab levels and tree pits
- **In-ground up-lighting** — To M&E specification
- **Digital advertising signage** — Outdoor lcd digital unit forum model or equivalent to M&E specification
- **Fairy lights to trees** — Specification tbc. Integrated power provision to M&E specification
- **Stainless steel studs** — Size: 25mm, low dome.
- **Cycleway demarcation studs** — Stainless steel satin finish, 5mm low dome top, ground fixed with fixing stub, cycleway image etched infill, land-mark landscaping systems or similar approved
- **Self-compacting bins** — To client specification. R= recycling G=General waste
- **Indicative gully locations** — To engineer's details, final locations subject to slab survey result
- **Maintenance zone** — .

NOTE:
All surface finished & product details subject to final coordination with Allied London & sign off.

Soft landscape

- **Trees** — As specified in drawing SJQ-102-EXA-XX-L00-DR-L-000200. For advanced urban tree pit system refer to drawing SJQ-102-EXA-XX-L00-DR-L-000701. In-ground lighting to M&E specifications
- **Trees in free standing planters** — Multi-stem trees H:960mm x 1600Ø free standing fortiftable planter. Pinto finish as supplied by Logic or similar approved
- **Arborraft cell system** — Indicative arborraft cell layout to be validated by supplier. For advanced urban tree pit system refer to drawing SJQ-102-EXA-XX-L00-DR-L-000701

No dimensions are to be scaled from this drawing.
All dimensions are to be checked on site.
Area measurements for indicative purposes only.

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Client
ALLIED LONDON

NOTE:
Structural penetration points and up-stands subject to project engineer sign off and design. Lighting columns, pop ups, smart bins in abeyance and subject to project team coordination and client sign off.

Rev	Description	Date
P10	TREE UPDATED TO WATER ST	15.09.2020
P09	STAGE 4 COORDINATION	11.09.2020
P08	STAGE 4 COORDINATION	10.01.2020
P07	STAGE 4 COORDINATION	17.12.2019
P06	STAGE 4 COORDINATION	09.12.2019
P05	STAGE 4 COORDINATION	25.11.2019
P04	STAGE 4 COORDINATION	07.11.2019
P03	STAGE 4 COORDINATION	01.11.2019
P02	STAGE 4 COORDINATION	31.10.2019
P01	INITIAL ISSUE	24.10.2019

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Project title
ST JOHN'S - GLOBE & SIMPSON

Drawing title
ST JOHN'S - GLOBE & SIMPSON
GENERAL ARRANGEMENT

Issued By	Manchester	T: 0161 850 8101	
Scale	1:200 @ A1	Drawn	ExA
Status	STAGE 4	Checked	SPL
Date	24.10.2019	Approved	JM

Drawing number: SJQ-102-EXA-XX-L00-DR-L-000100
Revision: P10

P:\201811882 ST JOHNS\01 CAD\02 SHEET LAYOUT\1959_GLOBE & SIMPSON\STAGE 4\SJQ-102-EXA-XX-L00-DR-L-000100.DWG

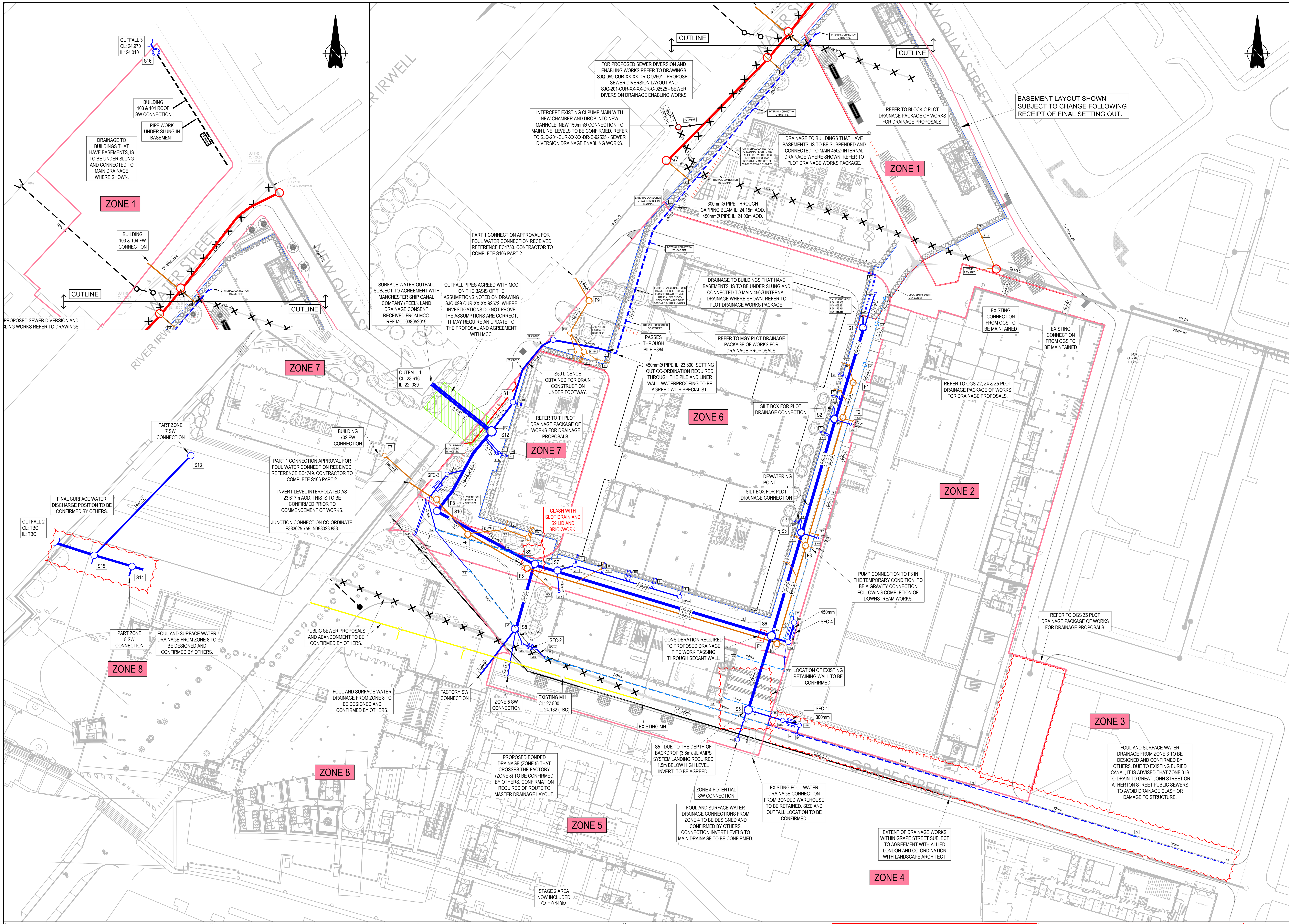
Appendix B

Masterplan Drainage Layout

Proposed Drainage Layout

Proposed Drainage Notes

Proposed Drainage Details Drawings



GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

DRAINAGE NOTES

PROPOSED COMBINED SEWER DIVERSION SUBJECT TO SECTION 185 AGREEMENT WITH UNITED UTILITIES. REFER TO DRAWING 067376-CUR-00-XX-DR-C-92501.

PROPOSED SURFACE WATER CATCHMENT DRAWING 067376-CUR-00-XX-DR-C-92555.

PROPOSED FOUL WATER CATCHMENT DRAWING 067376-CUR-00-XX-DR-C-92556.

PROPOSED FOUL CONNECTIONS TO COMBINED PUBLIC SEWER WILL BE SUBJECT TO A SECTION 106 AGREEMENT.

PROPOSED SURFACE WATER OUTFALL SUBJECT TO AGREEMENTS WITH PEEL HOLDINGS. MAX VELOCITY 3m/s.

LAND DRAINAGE CONSENT REQUIRED FROM MANCHESTER CITY COUNCIL LLFA FOR WORKS TO EXISTING RIVER WALLS TO CONSTRUCT OUTFALLS.

PROPOSED SURFACE WATER SEWERS WITHIN ADOPTED HIGHWAY SUBJECT TO LICENCE FROM MANCHESTER CITY COUNCIL.

SURFACE DRAINAGE, MANHOLE COVER AND INVERT LEVELS SHOWN ARE INDICATIVE ONLY AND ARE SUBJECT TO CHANGE FOLLOWING RECEIPT OF PLOT DESIGNERS INFORMATION.

PUBLIC SEWER REQUIREMENTS WITHIN GRAPE STREET/ZONE 8 TO BE CONFIRMED BY ZONE 8 PLOT DESIGNERS.

PROPOSED DRAINAGE SUBJECT TO CHANGE FOLLOWING CO-ORDINATION WITH EXISTING AND PROPOSED SERVICE ROUTES.

ALL EXTERNAL TRAFFICKED AREAS AND TRAFFICKED AREAS BEING DRAINED VIA SUSPENDED DRAINAGE, NOT PASSING THROUGH SMART FILTER CHAMBER TO RECEIVE A LEVEL OF SURFACE WATER TREATMENT PRIOR TO DISCHARGE. PLOT DESIGNER TO CONFIRM TYPE.

PPICS TO BE SET TO APPROPRIATE LEVEL TO COLLECT PLOT DRAINAGE. REFER TO SCHEDULE.

DRAINAGE PROPOSALS WITHIN GRAPE STREET ARE SUBJECT TO PHASING OF WORKS. CO-ORDINATION REQUIRED WITH SOUTH VILLAGE (ZONE 4).

DRAINAGE RUNS TO HAVE CLASS 'S' BEND AND SURROUND. DRAINAGE RUNS WILL REQUIRE CONCRETE PROTECTION WHERE COVER TO PIPE IS LESS THAN 1.2m. FINISHED LEVELS WILL IMPACT DEPENDING ON DEPTH.

Rev:	Description:	Date:	By:	Chkd:
P14	F9 LOCATION AMENDED	10.08.20	ATL	ATL
P13	F111, F111A UPDATED, F9A ADDED	10.07.20	ATL	CD
P12	UPDATED FOR T1 PLOT DRAINAGE	12.12.19	AH	CD
P11	DRAINAGE UPDATE	30.10.19	CD	CG
P10	S123 REMOVED. LEVELS UPDATED.	07.10.19	CD	CG
P09	MANHOLES F7 & F8 RELOCATED	02.08.19	CG	CG
P08	UPDATE FOLLOWING PLOT DEVELOPMENTS	25.07.19	CD	CG
P07	UPDATED TO SUIT PHASED CONSTRUCTION PACKAGE OF WORKS	13.05.19	CD	CG
P06	STAGE 4 UPDATE	04.04.19	CD	CG
P05	STAGE 4 UPDATE	19.02.19	CD	CG
P04	STAGE 4	21.08.18	CD	CG
P03	STAGE 3 - UPDATE	04.05.18	CD	CG
P02	STAGE 3	18.02.18	CD	CG
P01	FIRST ISSUE	22.12.17	CD	CG

KEY:

- PLOT BOUNDARIES
- EXISTING PUBLIC COMBINED SEWER
- EXISTING PUBLIC COMBINED SEWER TO BE ABANDONED
- EXISTING PUBLIC SURFACE SEWER
- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED FOUL WATER DRAINAGE
- PROPOSED COMBINED PUBLIC SEWER
- GATIC SLOT DRAIN. SIZED AS SHOWN
- GATIC SLOT DRAIN ACCESS BOX (AB)
- GATIC SLOT DRAIN SILT BOX (SB)
- SMART FILTER CHAMBER (SFC)
- UNDER SLUNG DRAINAGE TO BE DESIGNED AND CONFIRMED BY M&E ENGINEER
- BACKDROP REQUIRED TO MANHOLE — BD
- EXISTING BRIDGE STRUCTURE. EXACT POSITION AND SETTING OUT TO BE CONFIRMED.
- SURFACE WATER PLOT CONNECTION
- FOUL WATER PLOT CONNECTION
- SURFACE WATER DRAINAGE (PROGRAMME OF WORKS TBC)
- SURFACE WATER PPIC
- FOUL WATER PPIC
- REFERENCE OF CONNECTION THROUGH CAPPING BEAM/WALL (E1)
- PROPOSED SEWER DIVERSION BY OTHERS
- FLAP VALVE TO BE INSTALLED TO INCOMING PIPE AS INDICATED. ALTHON FLAP VALVE OR SIMILAR APPROVED. TYPE TBC. (FV)
- PROPOSED GULLY WITH 150mm CONNECTION (PG)

PLOT BOUNDARIES SHOWN ARE INDICATIVE. TO BE UPDATED FOLLOWING RECEIPT OF FINAL INFORMATION. TO BE CONFIRMED BY LANDSCAPE ARCHITECT/ALLIED LONDON.

REFER TO DRAWINGS 92555 AND 92556 FOR SURFACE AND FOUL WATER CATCHMENT LAYOUTS. THESE SHOW THE DIRECTION IN WHICH FOUL FLOWS AND SURFACE WATER HARD STANDING/ROOF AREAS ARE TO BE DIRECTED TO. THE DESIGN WILL REQUIRE UPDATING SHOULD ANY OF THESE CATCHMENTS CHANGE.

FOR PIPES PASSING THROUGH WALL LEVELS REFER TO SCHEDULE.

FOR SHALLOW DRAINAGE I.E. SLOT DRAINAGE ETC REFER TO PLOT DRAINAGE PACKAGE OF WORKS. THIS DRAWING IS TO BE CO-ORDINATED WITH PLOT DRAINAGE DESIGN.

REFER TO DRAWING 92563 FOR MANHOLE SCHEDULE AND DETAILS, PIPES PASSING THROUGH WALL SCHEDULE AND SMART FILTER CHAMBER DETAILS.

FOR BACKDROP INVERT LEVELS REFER TO MANHOLE SCHEDULE.

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Birmingham • Bristol • Cambridge • Cardiff • Douglas • Dublin • Edinburgh • Glasgow • Kendal • Leeds • Liverpool • London • Manchester • Nottingham

Status: STAGE 4

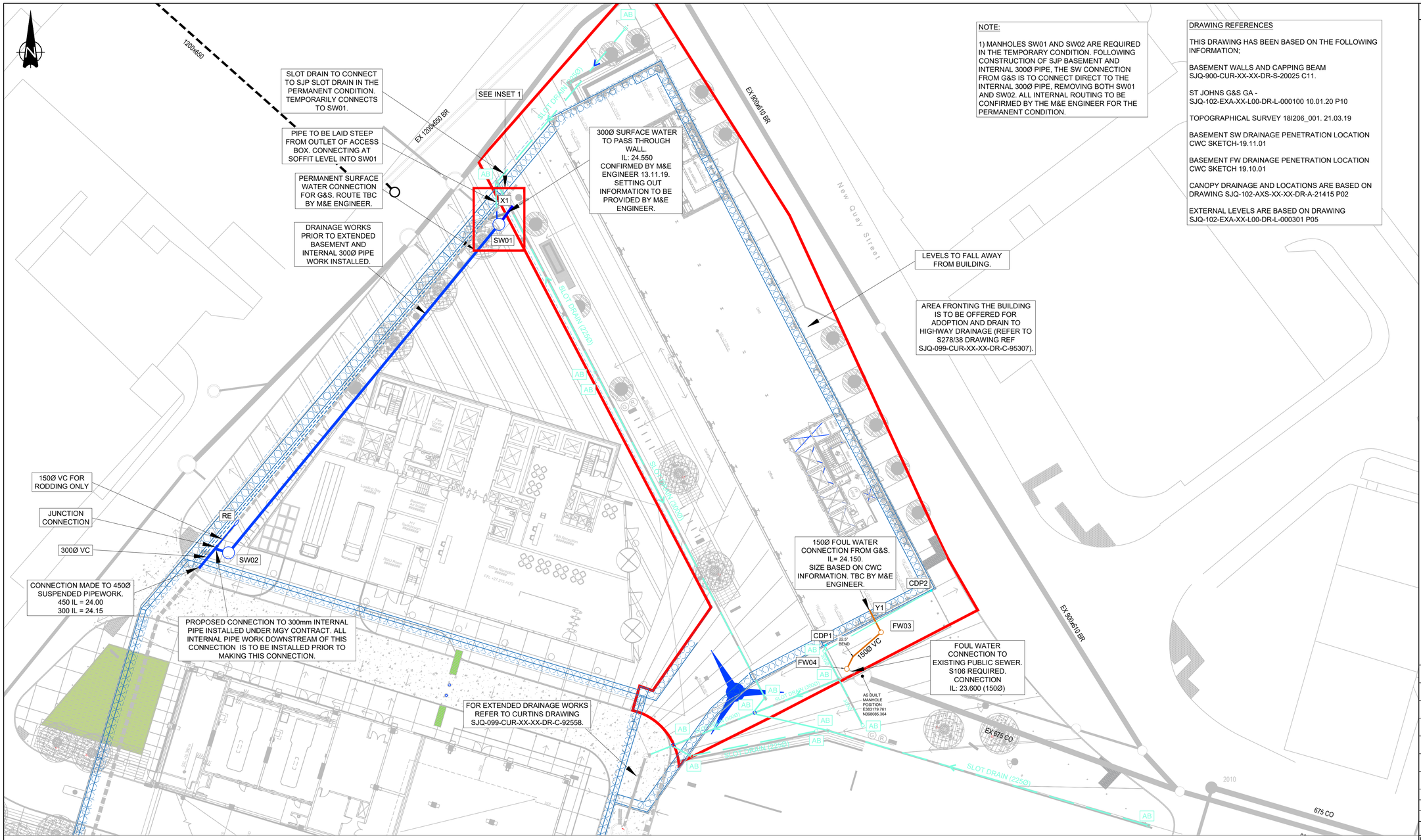
Project: ST JOHNS

Drg Title: PROPOSED DRAINAGE LAYOUT

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	22.12.17	CD	CD	CG
Scale: 1:500				

Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
SJQ-099	CUR	XX	XX	DR	C	92550	P14

\\mafs02\Projects\067001 - 068000\067376 - St Johns Infrastructure\QMS 4 Production\4B Models & Drawings_Civil-C\CAD\



NOTE:

1) MANHOLES SW01 AND SW02 ARE REQUIRED IN THE TEMPORARY CONDITION. FOLLOWING CONSTRUCTION OF SJP BASEMENT AND INTERNAL 300Ø PIPE, THE SW CONNECTION FROM G&S IS TO CONNECT DIRECT TO THE INTERNAL 300Ø PIPE, REMOVING BOTH SW01 AND SW02. ALL INTERNAL ROUTING TO BE CONFIRMED BY THE M&E ENGINEER FOR THE PERMANENT CONDITION.

DRAWING REFERENCES

THIS DRAWING HAS BEEN BASED ON THE FOLLOWING INFORMATION;

BASEMENT WALLS AND CAPPING BEAM SJQ-900-CUR-XX-XX-DR-S-20025 C11.

ST JOHNS G&S GA - SJQ-102-EXA-XX-L00-DR-L-000100 10.01.20 P10

TOPOGRAPHICAL SURVEY 18I206_001. 21.03.19

BASEMENT SW DRAINAGE PENETRATION LOCATION CWC SKETCH-19.11.01

BASEMENT FW DRAINAGE PENETRATION LOCATION CWC SKETCH 19.10.01

CANOPY DRAINAGE AND LOCATIONS ARE BASED ON DRAWING SJQ-102-AXS-XX-XX-DR-A-21415 P02

EXTERNAL LEVELS ARE BASED ON DRAWING SJQ-102-EXA-XX-L00-DR-L-000301 P05

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

DRAWING TO BE READ IN CONJUNCTION WITH NOTES DRAWING SJQ-102-CUR-00-XX-DR-C-92501.

KEY:

- BLOCK C BOUNDARY TBC
- PROPOSED SURFACE WATER MASTERPLAN DRAINAGE.
- PROPOSED FOUL WATER MASTERPLAN DRAINAGE.
- PROPOSED SURFACE WATER DRAINAGE.
- PROPOSED FOUL WATER DRAINAGE.
- PROPOSED GATIC SLOT DRAIN OR SIMILAR APPROVED.
- PROPOSED GATIC ACCESS BOX. (AB)
- SUSPENDED DRAINAGE SHOWN INDICATIVE. TO BE DESIGNED BY OTHERS.
- CANOPY ROOF DRAINAGE POINT WITH 100mm CONNECTION. (CDP0)
- RODDING EYE (RE)

INDICATES DRAINAGE NOT INSTALLED UNDER THIS CONTRACT. FINAL DESIGN TBC

CONSTRUCTION RECORD - FINAL CONSTRUCTION

THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

IT IS NOTED THAT THE WORKS ON THIS DRAWING REFLECT THE WORKS COVERED UNDER THE LEND LESE CONTRACT ONLY. EXTERNAL DRAINAGE WORKS ASSOCIATED WITH THE FINAL COMPLETED PLOT WILL BE UPDATED UPON SEPARATE DRAWINGS.

Rev:	Description:	Date:	By:	Chkd:
CR	FINAL CONSTRUCTION ISSUE	16.02.22	CG	CD
C01	ISSUED FOR CONSTRUCTION	16.09.20	AH	CD
P08	ADDITION OF FW04 TO RECONFIGURE EXTERNAL FOUL ROUTE. SLOT DRAINAGE ADJUSTMENTS.	11.09.20	CD	CD
P07	TEMPORARY DRAINAGE AMENDED TO PERMANENT	28.07.20	ATL	CD
P06	MINOR UPDATE	12.05.20	CD	CD
P05	STAGE 4 UPDATE- NEW PLOT BOUNDARY	05.02.20	AH	CD
P04	STAGE 4 UPDATE- INCLUSION OF CANOPY DRAINAGE	20.12.19	AH	CG
P03	STAGE 4	06.12.19	AH	CD
P02	STAGE 4 DRAFT UPDATE	08.11.19	AH	CD
P01	STAGE 4 DRAFT	19.07.19	CD	CG

REFER TO THE ABOVE LAYOUT FOR REFERENCE LOCATIONS

PROPOSED INVERT LEVEL TO PASS THROUGH BASEMENT WALL.

REF	IL (mAOD)	USE	U/S DIA (mm)	D/S DIA (mm)	D/S CHAMBER
X1	24.550	SURFACE	300	300	SW01
Y1	24.150	FOUL	150	150	FW03

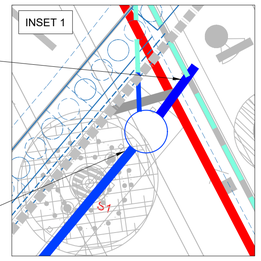
LETTER REFERENCES REFER TO PIPEWORK PASSING THROUGH THE CAPPING BEAM. WATERPROOFING DETAIL TO BE CONSIDERED WHICH HAS BEEN AGREED WITH CSSW.

PROPOSED MANHOLE SCHEDULE - REFER TO SFA 7th EDITION

MH REF	EASTING	NORTHING	CL (mAOD)	IL (mAOD)	DEPTH TO SOFFIT	DS PIPE DIA (mm)	MH DIA (mm)	MH TYPE	COVER SIZE (mm)	COVER CLASS	COMMENTS
SW01	383134.607	398141.456	26.600	24.500	1.800	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 500mm SUMP
SW02	383101.035	398100.678	26.300	24.160	1.840	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 500mm SUMP
FW03	383182.076	398090.818	26.750	24.110	2.490	150	600	TYPE 3	600 X 600	D400	NON ENTRY. 350 DIA REDUCER CAP REQUIRED.
FW04	383177.819	398086.259	26.750	23.952	2.648	150	600	TYPE 3	600 X 600	D400	NON ENTRY. 350 DIA REDUCER CAP REQUIRED.

PERMANENT SURFACE WATER DRAINAGE DETAILED AND SETTING OUT BY M&E DESIGNER.

TEMPORARY DRAINAGE WORKS PRIOR TO EXTENDED BASEMENT DETAILED BY CURTINS AS NOTED.



DRAINAGE RUNS, LINEAR DRAINS, GULLIES ETC LOCATIONS HAVE BEEN DESIGNED BASED ON LEVELS PROVIDED BY THE LANDSCAPE ARCHITECT (SJQ-102-EXA-XX-L00-DR-L-000301 P05). CURTINS TO BE NOTIFIED IF CHANGES ARE MADE TO THIS. CHANGES MAY RESULT IN THE NEED FOR ADDITIONAL RUNS.

DRAINAGE DESIGN SUBJECT TO CSSW PODIUM WATERPROOFING DESIGN (GULLIES UNDER REVIEW).

WHERE ACCESS BOXES ARE TO BE CONNECTED VIA PIPED SECTION. CORING INTO ACCESS BOXES REQUIRED.

CONTIGUOUS WALL LOCATION SHOWN INDICATIVE ONLY AND IS TO BE CONFIRMED BY OTHERS.

SUSPENDED DRAINAGE TO BE DESIGNED BY OTHERS. ALLOWANCE TO BE MADE FOR CONNECTING PROPOSED UNDERGROUND DRAINAGE WHERE SHOWN.

VEHICLE MOVEMENTS WITHIN THE DEVELOPMENT TO BE CONFIRMED BY OTHERS.

ALL DRAINAGE WITHIN TRAFFICKED AREAS TO HAVE A LOADING CLASS OF D400 OR GREATER.

BUILDING AND EXTERNAL LAYOUTS ARE SUBJECT TO CHANGE AS THE SCHEME PROGRESSES.

NO EXTERNAL AREAS ARE TO DRAIN DIRECTLY ONTO THE ADOPTED HIGHWAY. INTERCEPTING DRAINAGE WILL BE REQUIRED TO PREVENT THIS.

EXTERNAL LEVELS TO FALL AWAY FROM BUILDINGS.

ALL BUILDING LEVELS AND ACCESS TO BASEMENT CAR PARK TO ACHIEVE MINIMUM LEVELS OF 26.9m AOD IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE FLOOD RISK ASSESSMENT.

DRAINAGE RUNS SHOWN GREY ARE TO BE INSTALLED AS PART OF A SEPARATE CONTRACT. ONLY DRAINAGE SHOWN IN COLOUR IS TO FORM PART OF THIS SCHEME.

THRESHOLD DRAINAGE HAS NOT BEEN SHOWN AS LEVELS ARE TO FALL AWAY FROM BUILDINGS HOWEVER SHOULD THIS BE A REQUIREMENT OF THE CLIENT THESE WILL BE ADDED AT THE NEXT STAGE.

M&E ENGINEER TO CONFIRM THAT SUSPENDED DRAINAGE CAN BE DRAINED VIA THE CONNECTIONS PROVIDED.

LINEAR DRAINAGE CHANNELS SHOWN AND ASSOCIATED ACCESS BOXES ARE TO SIT ABOVE STRUCTURAL SLABS. HOLES IN ACCESS BOXES TO BE CUT ON SITE TO ALLOW FOR OUTLET/INLET PIPES TO BE CONNECTED. THE CONNECTIONS ARE TO BE SEALED APPROPRIATELY. ALL LINEAR CHANNELS ARE TO BE LOADING CLASS D400 UNLESS NOTED OTHERWISE.

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Status: FINAL CONSTRUCTION ISSUE

Project: ST JOHNS

Drg Title: BLOCK C - G&S PROPOSED DRAINAGE LAYOUT

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	08.11.18	CD	CD	CG

Scale: 1:250

Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
SJQ -	102 -	CUR-	00 -	XX -	DR -	C - 92500	- CR

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GENERAL NOTES

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3. ALL DRAINAGE WORKS TO BE IN ACCORDANCE WITH THE CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY (CESWI) AS INCLUDED IN SEWERS FOR ADOPTION 7th EDITION, THE REQUIREMENTS OF APPROVED DOCUMENT H (2002 EDITION) AND BUILDING REGULATIONS 2000.

4. ALL DETAILS AND DIMENSIONS ARE TO BE CHECKED BY THE CONTRACTOR. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.

5. ALL DIMENSIONS ARE IN METRES AND LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS OTHERWISE NOTED.

6. THE CONTRACTOR MAY WISH TO SURVEY ALL EXISTING DRAINAGE PRIOR TO COMMENCEMENT TO CONFIRM LOCATION AND CONDITION OF EXISTING DRAINAGE. POTENTIAL PRE-CLEANSING TO BE UNDERTAKEN IN ORDER TO FACILITATE SURVEY IF REQUIRED.

7. EXISTING SEWER LOCATIONS WHERE THE PROPOSED DRAINAGE IS TO CONNECT, ARE TO BE SURVEYED AND EXACT LEVELS CONFIRMED AND PROVIDED TO ENGINEER PRIOR TO COMMENCEMENT OF WORKS.

8. ALL EXISTING SERVICES TO BE LOCATED PRIOR TO COMMENCEMENT OF ANY DRAINAGE WORKS, AND WHERE NECESSARY PROTECTION OR DIVERSIONS TO BE UNDERTAKEN TO AVOID CONFLICT WITH THE PROPOSED WORK.

9. ALL EXISTING DRAINS TO BE ABANDONED SHALL BE EITHER GRUBBED OR GROUTED UP. GROUTING TO BE PERFORMED BY CAPPING ALL ENDS / CONNECTIONS AND FILLING THE RETAINING VOID WITH GROUT, IN ACCORDANCE WITH CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION (CESWI) 7TH EDITION.

10. ALL SOFT SPOTS TO BE REMOVED FROM BOTTOM OF EXCAVATIONS AND TO BE REFILLED TO FORMATION LEVEL WITH THE SAME MATERIAL AS PERMANENT WORKS WHICH REST IN IT.

11. FILLED GROUND MUST BE FILLED AND CONSOLIDATED BEFORE ANY SEWER WORKS ARE CARRIED OUT.

12. ALL ADOPTABLE DRAINAGE WORKS INCLUDING WORKS TO EXISTING PUBLIC SEWERS TO BE UNDERTAKEN IN ACCORDANCE WITH "SEWERS FOR ADOPTION 7th EDITION" AND "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION" AND CONSTRUCTED TO THE RELEVANT STATUTORY UNDERTAKERS DETAILS.

13. ALL PRIVATE DRAINAGE WORKS TO BE IN ACCORDANCE WITH "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION", BS EN 752 2008 'DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS' AND THE BUILDING REGULATIONS APPROVED 'DOCUMENT H'.

14. ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE:
- 150mm DIA TO BE VITRIFIED CLAY.
- 225mm DIA TO BE VITRIFIED CLAY.
- 300mm DIA TO BE VITRIFIED CLAY.
- 375mm DIA AND GREATER TO BE CLASS 120 CONCRETE PIPES.

15. ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.

16. PIPE MATERIALS IN ACCORDANCE WITH THE FOLLOWING:
- ALL VITRIFIED CLAY PIPES TO BS EN 295-1:
- ALL CONCRETE PIPES TO BE TO BS EN 1916.
- ALL CONCRETE MANHOLES TO BE TO BS EN1917.

17. AS AN ALTERNATIVE THE CONTRACTOR MAY USE AN APPROVED UNPLASTICISED POLYVINYL CHLORIDE (PVCU).

18. ALL ADOPTABLE DRAINAGE PIPES WILL REQUIRE A MINIMUM OF 1200mm COVER, IN ACCORDANCE WITH SEWERAGE UNDERTAKERS REQUIREMENTS.

19. ALL PRIVATE DRAINAGE PIPES WITH A COVER OF LESS THAN 600mm IN NON-TRAFFICKED AREAS AND LESS THAN 900mm IN TRAFFICKED AREAS TO BE BEDDED AND SURROUNDED IN CONCRETE (CLASS Z). COMPRESSIBLE MATERIAL SHALL BE PROVIDED AT EVERY PIPE JOINT. WHERE COVER EXCEEDS THIS DEPTH, PIPES ARE TYPICALLY BEDDED AND SURROUNDED IN CLASS S. REFER TO PIPE EMBEDMENT DETAILS DRAWING FOR SPECIFIC TYPES.

20. BACKFILL TO DRAINAGE TRENCHES UNDER HARDSTANDING AREAS TO BE TYPE 1 SUB BASE MATERIAL, ELSEWHERE BACKFILL TO BE FREE DRAINING READILY COMPATIBLE MATERIAL FREE FROM RUBBISH AND ORGANIC MATTER, FROZEN SOIL CLAY LUMPS AND LARGE STONES. TO BE COMPACTED IN LAYERS NOT EXCEEDING 150mm THICK.

21. BEDDING AND BACKFILL MATERIALS TO CONFORM TO THE REQUIREMENTS OF WIS 4-08-02 (TABLE A2).

22. WHERE FOUL SEWERS RUN ABOVE SURFACE SEWERS, CONCRETE PROTECTION MAY BE REQUIRED AT CROSSOVERS TO PREVENT ANY POTENTIAL CONTAMINATION.

23. THE FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.

24. ALL CONNECTIONS PASSING THROUGH BASES OR EDGE BEAMS TO BE IN SEALED SLEEVES. ALTERNATIVELY CONNECTIONS MAY BE CAST-IN WITH FLEXIBLE JOINTS NOT GREATER THAN 150MM FROM FACE OF CONCRETE.

25. WHERE DRAINAGE PIPES ARE LESS THAN 300mm BELOW THE UNDERSIDE OF THE GROUND FLOOR SLAB, CONCRETE ENCASEMENT IS REQUIRED (CLASS Z). COMPRESSIBLE JOINTS ARE TO BE PROVIDED AT EVERY PIPE JOINT WITHIN THE CONCRETE.

26. WHERE PIPES ARE MORE THAN 300mm BELOW THE UNDERSIDE OF THE SLAB, CLASS S BEDDING IS ACCEPTABLE.

27. SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.

28. PLASTIC CHANNEL SECTIONS WILL NOT BE PERMITTED WITHIN MANHOLE CHAMBERS. CLAYWARE CHANNELS SHALL BE USED WITHIN MANHOLES FOR PIPE SIZES UP TO AND INCLUDING 300mm DIAMETER.

29. ALL NEW CONNECTIONS INTO EXISTING MANHOLES (OR INTO EXISTING SEWERS) TO BE 'SOFFITS LEVEL' UNLESS OTHERWISE NOTED.

30. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.

31. SEWERS MUST HAVE 5m CLEARANCE FROM TREES AND HEDGES OR TO HAVE SUITABLE ROOT PROTECTION IN ACCORDANCE WITH SFA REQUIREMENTS.

32. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED TO ACCOMMODATE THE CONNECTIONS AND BENDS.

33. ALL INTERNAL DRAINAGE CONNECTIONS ARE PROVIDED TO THE PENETRATION POSITIONS SHOWN ON ARCHITECT AND M&E DRAWINGS. REFER TO DIMENSIONED LOCATIONS ON ARCHITECT'S GROUND FLOOR SETTING-OUT PLANS.

34. RAINWATER AND FOUL WATER POP UP LOCATIONS AND SIZES TO BE CONFIRMED BY ARCHITECT AND M&E ENGINEER.

35. ALL UNDERGROUND FOUL DRAINAGE SHOULD BE SUITABLY VENTED AT OR NEAR TO THE HEAD OF RUNS.

36. ALL ACCESS FITTINGS, STACKS, RWP'S AND GULLIES TO BE RODDABLE. ALL TO HAVE LOW LEVEL RODDING ACCESS PLATES UNLESS AN ALTERNATIVE MEANS OF ACCESS IS AGREED. ACCESS POINT TO BE ABOVE ANY GROUND FLOOR CONNECTED APPLIANCE SPILL LEVEL.

37. LARGE ACCESS FITTING REQUIRED ABOVE GROUND WHERE GREATER THAN 12M UP TO 22M TO A JUNCTION. SMALL ACCESS FITTING REQUIRED UP TO 12M TO A JUNCTION.

38. ALL GULLY AND CHANNEL DRAIN OUTLETS AND TERMINATION POINTS TO BE TRAPPED AND RODDABLE. INTERNAL GULLIES AND CHANNEL DRAINS TO BE SPECIFIED BY OTHERS.

39. ALL BRANCH CONNECTIONS TO BE MADE WITH SWEPT BENDS IN THE DIRECTION OF FLOW IN THE MAIN SEWER.

40. WHERE NO WC'S ARE CONNECTED UPSTREAM, UNDERSLAB FW DRAINAGE TO BE LAID AT 1:40 MIN. AFTER THE CONNECTION OF AT LEAST 1NO WC, A MIN. FALL OF 1:80 APPLIES.

41. ALL INTERNAL COVERS TO HAVE MECHANICALLY JOINTED CORNERS AND DOUBLE SEALED WITH RECESSED TRAY TO ALLOW FOR FINISHES.

42. ALL MANHOLE COVERS IN BLOCK/SLAB AND EXTERNAL PAVING AREAS TO HAVE RECESSED COVERS OF THE APPROPRIATE GRADE TO ACCEPT ARCHITECT'S PAVING PROPOSAL.

43. UNLESS NOTED OTHERWISE IN THE MANHOLE SCHEDULE, ALL MANHOLE, GULLY AND CHANNEL COVERS (IRONWORK) SHOULD BE THE FOLLOWING SPECIFICATION:

44. B125 LOAD CLASS IN PEDESTRIAN AREAS

45. D400 LOAD CLASS IN VEHICULAR AREAS.

46. COVER LEVELS, GULLY POSITIONS, AND BUILDING LOCATION ARE APPROXIMATE AND SHALL BE CONFIRMED BY ARCHITECT/LANDSCAPE ARCHITECT. CONTRACTOR TO ALLOW FOR ADJUSTMENT TO SUIT AGREED POSITIONS AND FINISHED LEVELS, AND CONFIRM ALL COVER LEVELS ON SITE.

47. OUTFALL CONNECTION(S) SUBJECT TO AGREEMENT WITH THE APPROVING AUTHORITY.

48. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING:-

49. (I). ALL OPERATIONS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE GENERAL HEALTH AND SAFETY POLICY OF THE DEVELOPER AS REQUIRED BY SECTIONS 2 OF THE HEALTH AND SAFETY AT WORK ACT 1974 AND IN PARTICULAR THE CONSTRUCTION (GENERAL PROVISIONS) REGULATIONS.

(II). THE LOCAL AUTHORITY AND UTILITIES COMPANIES ARE TO BE NOTIFIED PRIOR TO COMMENCEMENT OF WORK ON SITE.

(III). PRIOR TO CONSTRUCTION THE ACTUAL POSITIONS AND DEPTHS OF SERVICES LIKELY TO BE AFFECTED BY THE WORKS SHOULD BE ESTABLISHED BY MEANS OF HAND DIG IN CLOSE LIAISON WITH THE UTILITY COMPANIES. THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ENGINEER OF ANY SERVICES EXPOSED WHICH MAY AFFECT THE DESIGN.

(IIII). ALL OPERATIVES WORKING ON THE HIGHWAY WORKS MUST HAVE STREET WORKS ACCREDITATION.

50. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT PIPES ARE ADEQUATELY PROTECTED FROM CONCENTRATED LOADING BY CONSTRUCTION TRAFFIC DURING THE CONSTRUCTION PERIOD.

51. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.

52. THE CONTRACTOR SHALL ALLOW FOR KEEPING TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DE-WATERING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY & LLFA AND ENVIRONMENT AGENCY.

53. ALL DRAINAGE WORKS ARE TO BE CONSTRUCTED FROM THE OUTFALL TOWARDS THE HEAD OF RUN TO ENSURE THE OUTFALL CAN BE ACHIEVED.

54. ALL DRAINS TO BE CCTV SURVEYED ON COMPLETION OF THE WORKS.

55. FOR PROPOSED MASTERPLAN DRAINAGE INFORMATION & DETAILS REFER TO DRAWING SJQ-099-CUR-XX-XX-DR-C-92550.

56. EXISTING DRAINAGE WITHIN SITE BOUNDARY TO BE CONFIRMED. INDICATIVE LOCATIONS SHOWN SUBJECT TO SURVEY

57. EXISTING CONNECTIONS TO PUBLIC SEWER TO BE UTILIZED WHERE POSSIBLE.

58. LEVELS TO FALL AWAY FROM BUILDINGS WHERE POSSIBLE. SHOULD THIS NOT BE POSSIBLE, LINEAR DRAINAGE WILL BE REQUIRED AT DOOR LOCATIONS.

59. EXTERNAL LEVELS TO BE CONFIRMED. COVER LEVELS INDICATIVE SUBJECT TO FINAL LEVEL DESIGN.

60. PROPOSED CONNECTIONS TO UNITED UTILITIES PUBLIC SEWERS REQUIRE A S106 PART 1 & 2 APPLICATION.

61. SLOT DRAINAGE TO BE GATIC OR SIMILAR APPROVED.

62. FOUL DRAINAGE POINTS (SVPS, FFS, DPS etc) TO BE CONFIRMED BY M&E ENGINEER. DU's/FLOW RATES REQUIRED.

63. RAIN WATER PIPE LOCATIONS TO BE CONFIRMED BY ARCHITECT.

64. PROPOSED & EXISTING DRAINAGE SHOWN INDICATIVE ONLY.

65. REFER TO MANHOLE SCHEDULE FOR FURTHER DETAILS. MANHOLE SCHEDULE TO BE CONFIRMED.

66. DRAINAGE SUBJECT TO CHANGE FOLLOWING RECEIPT OF FINAL FOUNDATION LAYOUT DESIGN.

67. GREASE TRAPS SHOULD BE PROVIDED ABOVE GROUND WITHIN AN ENZYME TREATMENT SYSTEM, BY APPROPRIATE SPECIALIST DESIGNER.

68. WHERE PIPEWORK IS TO PASS THROUGH CAPPING BEAM OR WALLS, REFER TO WATERPROOFING DETAILS WHICH HAVE BEEN AGREED WITH CSSW.

69. EXTERNAL AREAS SUBJECT TO TRAFFIC, MAY REQUIRE A FORM OF TREATMENT. TRAFFICKED AREAS TO BE CONFIRMED. NO TREATMENT IS CURRENTLY SHOWN HOWEVER IS TO BE CONSIDERED FOLLOWING RECEIPT OF MAINTENANCE AND SERVICING STRATEGY.

70. COVER LEVELS BASED ON LANDSCAPE GENERAL ARRANGEMENTS SJQ-102-EXA-L00-DR-L-000100.

71. COVER LEVELS, GULLY POSITIONS, AND BUILDING LOCATION ARE APPROXIMATE AND SHALL BE CONFIRMED BY ARCHITECT/LANDSCAPE ARCHITECT. CONTRACTOR TO ALLOW FOR ADJUSTMENT TO SUIT AGREED POSITIONS AND FINISHED LEVELS, AND CONFIRM ALL COVER LEVELS ON SITE.

72. ALL MANHOLE COVERS IN BLOCK/SLAB AND EXTERNAL PAVING AREAS MAY REQUIRE RECESSED COVERS OF THE APPROPRIATE GRADE TO ACCEPT THE LANDSCAPE ARCHITECT'S PAVING PROPOSAL. TBC BY LANDSCAPE ARCHITECT.

73. THE LANDSCAPE ARCHITECT MAY REQUIRE THE ORIENTATION OF CHAMBER COVERS TO BE CO-ORDINATED WITH THE PAVING PATTERN. THIS WILL BE SUBJECT TO REVIEW WITH THE MANHOLE INTERNAL BENCHING ARRANGEMENT, LANDING AND STEP LOCATION AND IF REQUIRED, SHOULD BE ADVISED TO US AS SOON AS POSSIBLE.

74. ALL INTERNAL COVERS TO HAVE MECHANICALLY JOINTED CORNERS AND DOUBLE SEALED WITH RECESSED TRAY TO ALLOW FOR FINISHES. TBC BY ARCHITECT.

75. ALL MANHOLE, GULLY AND CHANNEL (ACCESS/OUTLET) COVERS (IRONWORK) SHOULD BE THE FOLLOWING SPECIFICATION:
(I)B125 LOAD CLASS IN PEDESTRIAN AREAS
(II)D400 LOAD CLASS IN VEHICULAR AREAS.

76. ANY AMBIGUITIES ON DRAWINGS/ACCESS AND MAINTENANCE STRATEGY SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY.

77. ALL SURFACE CHANNEL ACCESS BOXES/OUTLET BOXES IN BLOCK/SLAB AND EXTERNAL PAVING AREAS MAY REQUIRE RECESSED COVERS OF THE APPROPRIATE GRADE TO ACCEPT THE LANDSCAPE ARCHITECT'S PAVING PROPOSAL. TBC BY LANDSCAPE ARCHITECT AND SUBJECT TO AVAILABILITY FROM MANUFACTURER.

78. ALL SURFACE CHANNELS TO BE OF THE TREADSAFE TYPE, UNLESS OTHERWISE SPECIFIED.

79. ALL PROPRIETARY PRODUCTS TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.

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DRAWING TO BE READ IN CONJUNCTION WITH PROPOSED DRAINAGE LAYOUT SJQ-102-CUR-00-XX-DR-C-92500.

CONSTRUCTION RECORD - FINAL CONSTRUCTION
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IT IS NOTED THAT THE WORKS ON THIS DRAWING REFLECT THE WORKS COVERED UNDER THE LEND LESE CONTRACT ONLY. EXTERNAL DRAINAGE WORKS ASSOCIATED WITH THE FINAL COMPLETED PLOT WILL BE UPDATED UPON SEPARATE DRAWINGS.

Rev:	Description:	Date:	By:	Chkd:
CR	FINAL CONSTRUCTION ISSUE	16.02.22	CG	CG
C01	ISSUED FOR CONSTRUCTION	16.09.20	AH	CD
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Status: FINAL CONSTRUCTION ISSUE

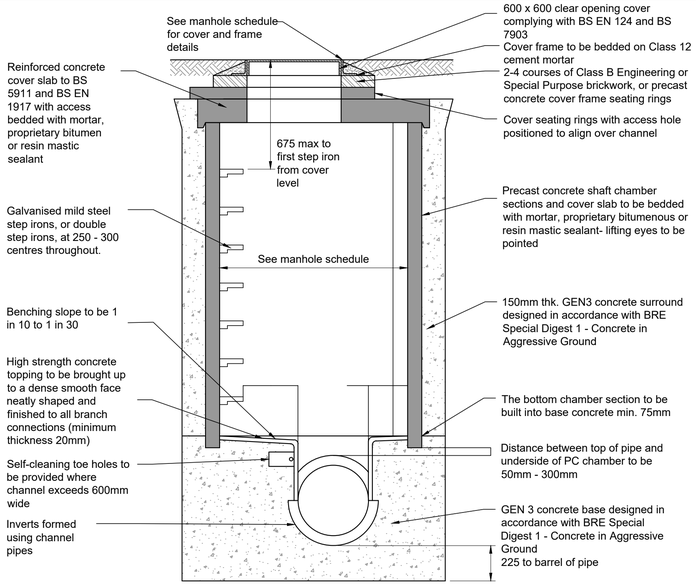
Project: ST JOHNS

Drg Title: BLOCK C - G&S DRAINAGE NOTES

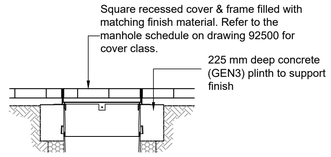
Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	05.03.19	CD	CD	CG
Scale: 1:250				

Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
SJQ-102	CUR-	00	XX	DR	C	92501	CR

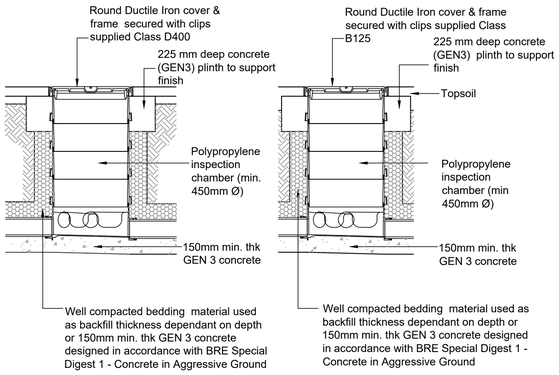
\\mafs\2\Projects\068001 - 069000\068166 - Globe and Simpson\Q4-Production\4A-Models-Drawings\CICAD\



TYPICAL TYPE 2 CONCRETE MANHOLE (PCC) DETAIL
MAX. DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE 3.0m
(SCALE 1:20)



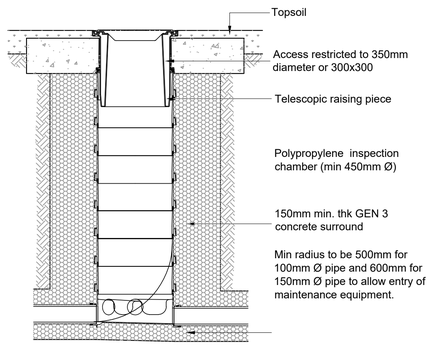
Sited in hard landscaped areas with recessed cover



Sited in soft landscaped areas with standard round cover

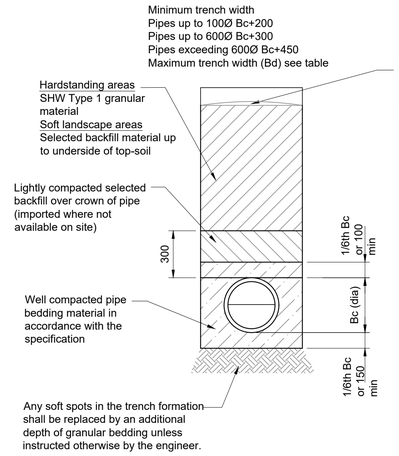
Sited in soft landscaped areas with standard round cover

TYPICAL INSPECTION CHAMBER (IC) DETAIL
MAX DEPTH 1.2m

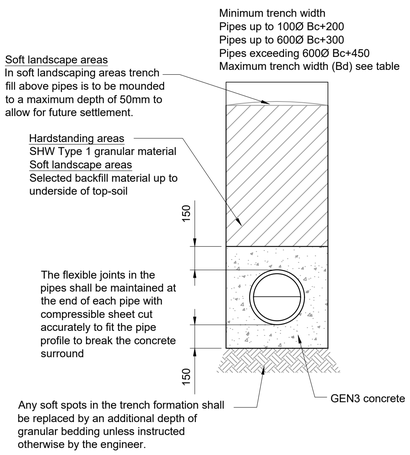


Telescopic IC sited in soft landsaped areas

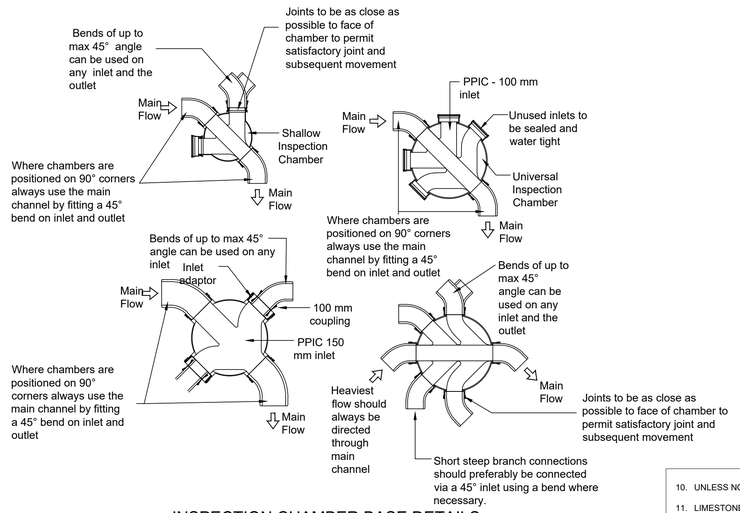
TYPE 3 DEEP INSPECTION CHAMBER (IC) DETAIL
DEPTHS BETWEEN 1.2m AND 3.0m
(SCALE 1:20)



CLASS S - 360° GRANULAR SURROUND PIPE BEDDING DETAIL
(SCALE 1:20)



CLASS Z - CONCRETE BED AND SURROUND PIPE BEDDING DETAIL
(COVER < 900mm IN VEHICULAR LOADING AND OPEN FIELD.
COVER <600mm ELSEWHERE EXCEPT UNDER BUILDINGS.)
(SCALE 1:20)



INSPECTION CHAMBER BASE DETAILS
(SCALE 1:20)

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
3. ALL ADOPTABLE DRAINAGE WORKS INCLUDING WORKS TO EXISTING PUBLIC SEWERS TO BE UNDERTAKEN IN ACCORDANCE WITH "SEWERS FOR ADOPTION 7th EDITION" AND "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION" AND CONSTRUCTED TO THE RELEVANT STATUTORY UNDERTAKERS DETAILS.
4. ALL PRIVATE DRAINAGE WORKS TO BE IN ACCORDANCE WITH "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION", BS EN 752 2008 'DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS' AND THE BUILDING REGULATIONS APPROVED 'DOCUMENT H'.
5. THE SIZES OF MANHOLES STATED ARE MINIMUM. IF TWO OR MORE PIPES ENTER THE MANHOLE, THE CHAMBER SIZE MUST BE SUFFICIENT TO ACCOMMODATE THE ADEQUATE BENCHING WIDTHS. ALL PIPES BUILT INTO THE MANHOLE INVERT SHOULD BE INSTALLED WITH SOFFITS LEVEL.
6. THE CONTRACTOR SHALL GIVE AT LEAST ONE WORKING DAYS NOTICE TO THE ENGINEER TO ALLOW OPPORTUNITY TO EXAMINE ANY FORMATION OR ANY WITNESS TESTING.
7. ALL SOFT SPOTS TO BE REMOVED FROM THE BOTTOM OF EXCAVATIONS AND TO BE REFILLED TO FORMATION LEVEL WITH THE SAME MATERIAL AS PERMANENT WORKS WHICH REST IN IT.
8. ALL CONCRETE AND CONCRETE PRODUCTS SHALL SATISFY THE SULPHATE CLASSIFICATION ADVISED IN THE SITE INVESTIGATION (BS-EN 206 STATES PORTLAND LIMESTONE CEMENT IS NOT PERMITTED). ALL CONCRETE GRADES STATED ON THIS DRAWING ARE THE MINIMUM STRENGTH REQUIREMENTS. THEY MUST BE CAPABLE OF RESISTING THE REQUIRED SULPHATE CLASSIFICATION.
9. MANHOLE COVER CLASSIFICATION TO BE IN ACCORDANCE WITH BS-EN 124 AS SHOWN IN THE TABLE BELOW.

COVER TYPES TO EN124		
CLASS	LOAD (T)	APPLICATIONS
A	1.5	PEDESTRIAN ONLY AREAS
B	12.5	CAR PARKS
C	25	SERVICE ROADS NOT EXTENDING MORE THAN 500mm FROM KERB FACE INTO THE CARRIAGEWAY.
D	40	ROADS, LOADING AREAS AND CONCRETE HARDSTANDINGS.

COVER SIZES		
TYPE	LENGTH AND WIDTH (mm)	CIRCULAR (mm)
SMALL ACCESS FITTING	150 x 100	150
LARGE ACCESS FITTING	225 x 100	-
INSPECTION CHAMBER	450 x 450	450
MANHOLE FOR TYPE B MANHOLE WITH <1.8m INTERNAL HEIGHT	600 x 600 685 x 1220 MULTIPLE	600

CONCRETE TYPES			
LOCATION	TYPE	MAX AGGREGATE	NOMINAL SLUMP
ALL CONCRETE FOR DRAINAGE	GEN 3	20mm	S3

RATE OF SAMPLING FOR COMPRESSIVE STRENGTH TEST ONE SET OF CUBES PER 20cu m OR 10 BATCHES OF CONCRETE WHICHEVER REPRESENTS THE LESSER VOLUME, BUT NOT LESS THAN ONE FOR EACH DAY OR USE.
A SET OF CUBES IS TO COMPRISE THREE CUBES, ONE FOR TESTINE AT 28 DAYS, ONE FOR TESTING AT 7 DAYS AND A SPARE. THE NUMBER OF SPARE CUBES AND CUBES FOR TESTING AT 7 DAYS MAY BE REDUCED AT THE CONTRACTORS RISK.

CONSTRUCTION RECORD - FINAL CONSTRUCTION
THE INFORMATION IS BASED ON CONFIRMATION FROM THE CONTRACTOR OF THE INSTALLED WORKS. THERE MAY BE VARIATIONS ON SITE WHICH ARE NOT REFLECTED ON THIS DRAWING AND HAS NOT BEEN VERIFIED BY CURTINS.

IT IS NOTED THAT THE WORKS ON THIS DRAWING REFLECT THE WORKS COVERED UNDER THE LEND LESE CONTRACT ONLY. EXTERNAL DRAINAGE WORKS ASSOCIATED WITH THE FINAL COMPLETED PLOT WILL BE UPDATED UPON SEPARATE DRAWINGS.

10. UNLESS NOTED OTHERWISE, ALL MORTAR TO BE CLASS 1 (1:3 CEMENT:SAND).
11. LIMESTONE PIPE BEDDING WILL NOT BE PERMITTED IN ACIDIC GROUNDWATER CONDITIONS. REFER TO CONTRACT SPECIFICATION FOR SPECIFIC DETAILS.
12. CUT ENDS OF ANY REINFORCED CONCRETE PIPES ARE TO BE TREATED WITH EPOXY RESIN PAINT/MORTAR.
13. CONSTRUCTION JOINTS IN CONCRETE SURROUND MUST NOT BE WITHIN 150MM OF CHAMBER RING JOINTS.
14. FLEXIBLE JOINTS SHALL BE PROVIDED AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF ANY STRUCTURE INTO WHICH IT IS BUILT. (SEE TABLE BELOW).

PIPE DIAMETER (mm)	MAX DIM "A" (mm)	MAX DIM "B" (mm)
150	150	500-750
225-450	DIA	500-750
525-600	DIA	< 1000

15. IN CLAY SOIL, PIPE TRENCHES ARE TO BE BACKFILLED WITH CLEAN GRANULAR HARDCORE 75MM DOWN.
16. CONNECTIONS INTO MANHOLES SHALL BE CONSTRUCTED AT SOFFIT LEVEL, UNLESS DETAILED DIFFERENTLY ON CONSTRUCTION DRAWINGS.
17. SUITABLE MATERIAL/SELECTED FILL SHOULD BE READILY COMPACTABLE, FREE FROM TIMBER, FROZEN MATERIAL, VEGETATION AND FOREIGN MATTER. IT SHOULD EXCLUDE ANY LUMPS OF CLAY RETAINED ON A 100MM SIEVE AND STONES RETAINED ON A 40MM SIEVE.
18. CONCRETE BENCHING AND PIPE SURROUND SHALL BE PLACED IN A SINGLE CONTINUOUS OPERATION FROM THE TOP OF THE BASE SLAB TO TOP OF BENCHING AND PIPE SURROUND.
19. PCC COVER SLABS AND MANHOLE RINGS TO BE MANUFACTURED TO BS-EN 1917 AND BS 5911:3 AND KITEMARKED.
20. PCC COVER SLABS TO HAVE 600X750MM CLEAR OPENING UNLESS STATED OTHERWISE WITHIN THIS SCHEDULE AND BE MANUFACTURED TO BS-EN 1917 AND BS 5911:3.
21. CORBEL SEATING UNITS TO BE MANUFACTURED TO BS-EN 1917 AND BS 5911:3 TO BE USED ECCENTRIC OVER SLAB OPENING TO REDUCE FRO. 600X600MM OPENING IN IRONWORK TO 600X750MM OPENING IN COVER SLAB WHERE APPLICABLE.
22. ALL CONCRETE PIPEWORK TO BE MANUFACTURED TO BS-EN 1916 AND BS 5911:1 AND STRENGTH CLASS 120 AND KITEMARKED.
23. ALL CLAY PIPEWORK SHALL BE EXTRA STRENGTH CLAYWARE TO BS 295 AND BS 65 (SW PIPES ONLY).
24. THE CONTRACTOR MAY ELECT TO USE REINFORCES UPVC PIPES COVERED BY BS-EN 1401:1 FOR DIAMETERS UP TO AND INCLUDING 300MM.
25. ALL PROPRIETARY PRODUCTS ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS GUIDANCE AND INSTRUCTIONS.

Rev:	Description:	Date:	By:	Chkd:
CR	FINAL CONSTRUCTION ISSUE	16.02.22	CG	CG
C01	ISSUED FOR CONSTRUCTION	16.09.20	AH	CD
P03	STAGE 4 ISSUE	06.12.19	AH	CD
P02	STAGE 4 DRAFT UPDATE	08.11.19	AH	CD
P01	STAGE 4 DRAFT	19.07.19	CD	CG

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Status:
FINAL CONSTRUCTION ISSUE

Project:
ST JOHNS

Drg Title:
BLOCK C - G&S
DRAINAGE DETAILS SHEET 1

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	19.07.19	CD	CD	CG

Scale: NTS

Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
SJQ-102	-CUR-	00	- XX	- DR	- C	- 92502	- CR

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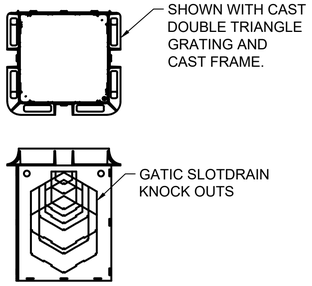
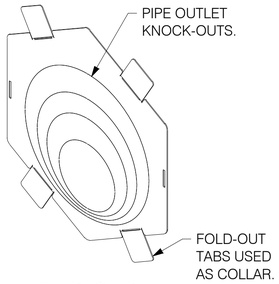


REFER TO GATIC DETAILS, AVAILABLE ONLINE, FOR DIMENSIONS AND SIZING.

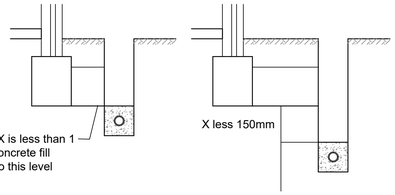
ACCESS BOX WITH DOUBLETRIANGULAR GRATING5



END CAP

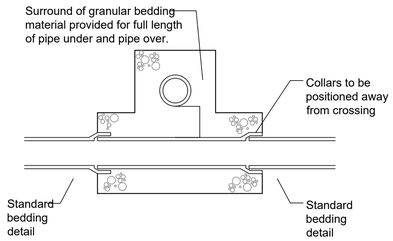
END CAPS

DESCRIPTION	PART NUMBER	PIPE OUTLE SIZES (mm)
100mm END CAP / OUTLET	00162	92
150mm END CAP / OUTLET	00163	115
225mm END CAP / OUTLET	00164	115/165/205
300mm END CAP / OUTLET	00165	115/165/205/255
350mm END CAP / OUTLET	00166	115/165/205/255/320
400mm END CAP / OUTLET	00167	115/165/205/255/320/360
500mm END CAP	00168	N/A
600mm END CAP	00169	N/A



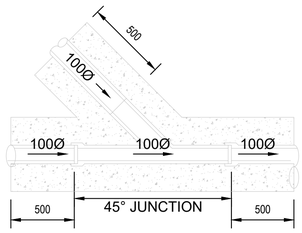
TYPICAL DETAILS WHERE DRAINAGE TRENCH IS DEEPER THAN FOUNDATIONS

(SCALE 1:20)



PIPE CROSSINGS DETAIL

(SCALE 1:20)



TYPICAL SADDLE DETAIL

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9. MANHOLE COVER CLASSIFICATION TO BE IN ACCORDANCE WITH BS-EN 124 AS SHOWN IN THE TABLE BELOW.

COVER TYPES TO EN124		
CLASS	LOAD (T)	APPLICATIONS
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B	12.5	CAR PARKS
C	25	SERVICE ROADS NOT EXTENDING MORE THAN 500mm FROM KERB FACE INTO THE CARRIAGEWAY.
D	40	ROADS, LOADING AREAS AND CONCRETE HARDSTANDINGS.

COVER SIZES		
TYPE	LENGTH AND WIDTH (mm)	CIRCULAR (mm)
SMALL ACCESS FITTING	150 x 100	150
LARGE ACCESS FITTING	225 x 100	-
INSPECTION CHAMBER	450 x 450	450
MANHOLE FOR TYPE B MANHOLE WITH <1.8m INTERNAL HEIGHT	600 x 600 685 x 1220 MULTIPLE	600

CONCRETE TYPES			
LOCATION	TYPE	MAX AGGREGATE	NOMINAL SLUMP
ALL CONCRETE FOR DRAINAGE	GEN 3	20mm	S3

RATE OF SAMPLING FOR COMPRESSIVE STRENGTH TEST ONE SET OF CUBES PER 20cu m OR 10 BATCHES OF CONCRETE WHICHEVER REPRESENTS THE LESSER VOLUME, BUT NOT LESS THAN ONE FOR EACH DAY OR USE.
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225-450	DIA	500-750
525-600	DIA	< 1000

15. IN CLAY,SOIL, PIPE TRENCHES ARE TO BE BACKFILLED WITH CLEAN GRANULAR HARDCORE 75MM DOWN.
16. CONNECTIONS INTO MANHOLES SHALL BE CONSTRUCTED AT SOFFIT LEVEL, UNLESS DETAILED DIFFERENTLY ON CONSTRUCTION DRAWINGS.
17. SUITABLE MATERIAL/SELECTED FILL SHOULD BE READILY COMPACTABLE, FREE FROM TIMBER, FROZEN MATERIAL, VEGETATION AND FOREIGN MATTER. IT SHOULD EXCLUDE ANY LUMPS OF CLAY RETAINED ON A 100MM SIEVE AND STONES RETAINED ON A 40MM SIEVE.
18. CONCRETE BENCHING AND PIPE SURROUND SHALL BE PLACED IN A SINGLE CONTINUOUS OPERATION FROM THE TOP OF THE BASE SLAB TO TOP OF BENCHING AND PIPE SURROUND.
19. PCC COVER SLABS AND MANHOLE RINGS TO BE MANUFACTURED TO BS-EN 1917 AND BS 5911:3 AND KITEMARKED.
20. PCC COVER SLABS TO HAVE 600X750MM CLEAR OPENING UNLESS STATED OTHERWISE WITHIN THIS SCHEDULE AND BE MANUFACTURED TO BS-EN 1917 AND BS 5911:3.
21. CORBEL SEATING UNITS TO BE MANUFACTURED TO BS-EN 1917 AND BS 5911:3 TO BE USED ECCENTRIC OVER SLAB OPENING TO REDUCE FRO, 600X600MM OPENING IN IRONWORK TO 600X750MM OPENING IN COVER SLAB WHERE APPLICABLE.
22. ALL CONCRETE PIPEWORK TO BE MANUFACTURED TO BS-EN 1916 AND BS 5911:1 AND STRENGTH CLASS 120 AND KITEMARKED.
23. ALL CLAY PIPEWORK SHALL BE EXTRA STRENGTH CLAYWARE TO BS 295 AND BS 65 (SW PIPES ONLY).
24. THE CONTRACTOR MAY ELECT TO USE REINFORCES UPVC PIPES COVERED BY BS-EN 1401:1 FOR DIAMETERS UP TO AND INCLUDING 300MM.
25. ALL PROPRIETARY PRODUCTS ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS GUIDANCE AND INSTRUCTIONS.

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P01	STAGE 4 DRAFT	19.07.19	CD	CG

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Status:
FINAL CONSTRUCTIOON ISSUE

Project:
ST JOHNS

Drg Title:
BLOCK C - G&S
DRAINAGE DETAILS SHEET 2

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	19.07.19	CD	CD	CG
Scale: NTS				

Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
SJQ-102	-CUR-	00	- XX	- DR	- C	- 92503	- CR

\\mafs02\Projects\080001 - 090000\088166 - Globe and Simpson\04-Production\4A-Models-Drawings\C\CAD\

Appendix C

As Installed Drainage Photographs (Foul and Surface Water)

Q05	DRAINAGE INSPECTION - PIPES

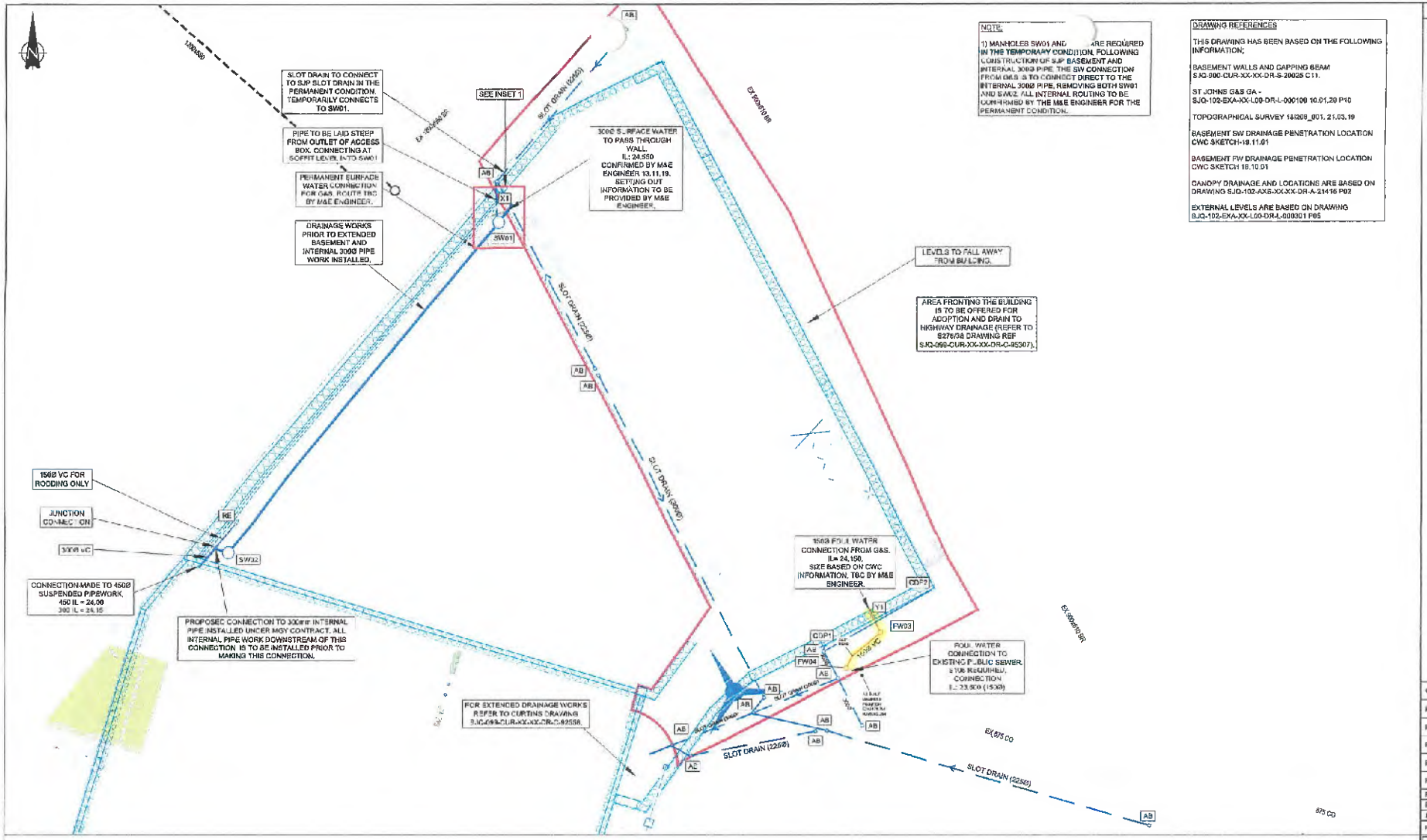
CONTRACT	St Johns	CONTRACT NO	201	DATE	03.11.2020
LOCATION	FW03 – FW04 G&S	ITEM	Foul Water Line		

NO	CHECK LIST ITEM	DATE	ADANA	DATE	PRINCIPAL CONTRACTOR
1	BUILDING CONTROL NOTIFIED OF START	03.11.2020	✓	07-11-20	
2	INVERT LEVEL OF OUTFALL CHECKED	03.11.2020	✓	07-11-20	
3	PIPES TO CORRECT SIZE & SPECIFICATION (225mm)	03.11.2020	✓	07-11-20	
4	SET OUT LINE & LEVEL	03.11.2020	✓	07-11-20	
5	EXCAVATION TO CORRECT DEPTH / WIDTH	03.11.2020	✓	07-11-20	
6	PIPE BEDDING AND SURROUND TO SPECIFICATION	03.11.2020	✓	07-11-20	
7	ALL JUNCTIONS RECORDED ON DRAWINGS	03.11.2020	✓	07-11-20	
8	BUILDING INSPECTOR WITNESSED DRAIN RUN	N/A	✓		
9	BACKFILL TO SPECIFICATION & COMPACTED	03.11.2020	✓	03-11-20.	
10	PIPES RODDED, CLEANED & TESTED	To Follow	✓		
11					
12					
13					

COMMENTS:
Pipes to be jetted and cleaned at later date
All pipes line and Junctions plotted on As-Built

NAME	SIGNED	DATE
Lee Smith	LS	03.11.2020
FOR AND ON BEHALF OF ADANA CONSTRUCTION		

NAME	SIGNED	DATE
DAVID IANIOS		07.11.20.
FOR AND ON BEHALF OF	LEADRATE.	



NOTE:

1) MANHOLES SW01 AND ARE REQUIRED IN THE TEMPORARY CONDITION, FOLLOWING CONSTRUCTION OF SJP BASEMENT AND INTERNAL 300Ø PIPE. THE SW CONNECTION FROM G&S IS TO CONNECT DIRECT TO THE INTERNAL 300Ø PIPE, REMOVING BOTH SW01 AND SW02. ALL INTERNAL ROUTING TO BE CONFIRMED BY THE M&E ENGINEER FOR THE PERMANENT CONDITION.

DRAWING REFERENCES

THIS DRAWING HAS BEEN BASED ON THE FOLLOWING INFORMATION;

BASEMENT WALLS AND CAPPING BEAM SJQ-300-CUR-XX-XX-DR-S-200025 C11.

ST JOHNS G&S GA - SJQ-102-EXA-XX-L00-DR-L-000100 10.01.20 P10

TOPOGRAPHICAL SURVEY 181209_001. 21.03.19

BASEMENT SW DRAINAGE PENETRATION LOCATION CWC SKETCH-19.11.01

BASEMENT FW DRAINAGE PENETRATION LOCATION CWC SKETCH 19.10.01

CANOPY DRAINAGE AND LOCATIONS ARE BASED ON DRAWING SJQ-102-AXS-XX-XX-DR-A-21416 P02

EXTERNAL LEVELS ARE BASED ON DRAWING SJQ-102-EXA-XX-L00-DR-L-000301 P05

GENERAL NOTES:

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3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

KEY:

- BLOCK C BOUNDARY TBC
- PROPOSED SURFACE WATER MASTERPLAN DRAINAGE.
- PROPOSED FOUL WATER MASTERPLAN DRAINAGE.
- PROPOSED SURFACE WATER DRAINAGE.
- PROPOSED FOUL WATER DRAINAGE.
- PROPOSED GATIC SLOT DRAIN OR SIMILAR APPROVED.
- PROPOSED GATIC ACCESS BOX. AB
- SUSPENDED DRAINAGE SHOWN INDICATIVE. TO BE DESIGNED BY OTHERS.
- CANOPY ROOF DRAINAGE POINT WITH 100mm CONNECTION. CDP0
- RODDING EYE. RE

DRAWING TO BE READ IN CONJUNCTION WITH NOTES DRAWING SJQ-102-CUR-00-XX-DR-C-92501.

Rev	Description	Date	By	Chk
C01	ISSUED FOR CONSTRUCTION	15.09.20	AH	CD
P08	ADDITION OF PARKITE RECTANGULAR EXTERNAL FOUL ROUTE. SLOT DRAINAGE ADJUSTMENTS	11.09.20	CD	CD
P07	TEMPORARY DRAINAGE AMENDED TO PERMANENT	23.07.20	AEL	CD
P06	MINOR UPDATE	12.05.20	CD	CD
P05	STAGE 5 UPDATE- NEW PLOT BOUNDARY	05.02.20	AH	CD
P04	STAGE 4 UPDATE- INCLUSION OF CANOPY DRAINAGE	23.12.19	AH	CD
P03	STAGE 4	05.12.19	AH	CD
P02	STAGE 4 DRAFT UPDATE	01.11.19	AH	CD
P01	STAGE 1 DRAFT	19.01.19	CD	CD

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Status: STAGE 5

Project: ST JOHNS

Drg Title: BLOCK C - G&S PROPOSED DRAINAGE LAYOUT

Size	Scale	Drawn By	Designed By	Checked By
A1	1:250	CD	CD	CD

Project No	Originator	Zone	Level	Type	Discipline	Category / Number	Rev
SJQ -	102 -	CUR- 00	- XX	- DR	- C	- 92500	- C01

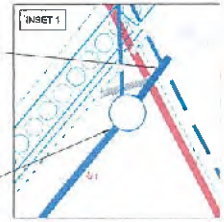
REFER TO THE ABOVE LAYOUT FOR REFERENCE LOCATIONS

PROPOSED INVERT LEVEL TO PASS THROUGH BASEMENT WALL.					
REF	IL (mAOD)	USE	U/S DIA (mm)	D/S DIA (mm)	D/S CHAMBER
X1	24.550	SURFACE	300	300	SW01
Y1	24.250	FOUL	150	150	FW03

LETTER REFERENCES REFER TO PIPEWORK PASSING THROUGH THE CAPPING BEAM, WATERPROOFING DETAIL TO BE CONSIDERED WHICH HAS BEEN AGREED WITH CSSW.

PERMANENT SURFACE WATER DRAINAGE DETAILED AND SETTING OUT BY M&E DESIGNER.

TEMPORARY DRAINAGE WORKS PRIOR TO EXTENDED BASEMENT DETAILED BY CURTINS AS NOTED.



PROPOSED MANHOLE SCHEDULE - REFER TO SFA 70 EDITION												
MH REF	EASTING	NORTHING	CL (mAOD)	IL (mAOD)	DEPTH TO SOFFIT	DS PIPE DIA (mm)	MH DIA (mm)	MH TYPE	COVER SIZE (mm)	COVER CLASS	COMMENTS
SW01	388134.677	398141.456	26.600	24.500	1.800	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 500mm SUMP
SW02	388101.035	398100.678	26.300	24.160	1.840	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 500mm SUMP
FW03	388132.076	398030.818	26.750	24.130	2.490	150	600	TYPE 3	600 X 600	D400	NON ENTRY, 450 DIA REDUCER CAP REQUIRED.
FW04	388177.819	398036.259	26.750	23.952	2.648	150	600	TYPE 3	600 X 600	D400	NON ENTRY, 450 DIA REDUCER CAP REQUIRED.

DRAINAGE RUNS, LINEAR DRAINS, GULLIES ETC LOCATIONS HAVE BEEN DESIGNED BASED ON LEVELS PROVIDED BY THE LANDSCAPE ARCHITECT (SJQ-102-EXA-XX-L00-DR-L-000301 P05). CURTINS TO BE NOTIFIED IF CHANGES ARE MADE TO THIS. CHANGES MAY RESULT IN THE NEED FOR ADDITIONAL RUNS.

DRAINAGE DESIGN SUBJECT TO CSSW PODIUM WATERPROOFING DESIGN (GULLIES UNDER REVIEW).

WHERE ACCESS BOXES ARE TO BE CONNECTED VIA PIPED SECTION, CORING INTO ACCESS BOXES REQUIRED.

CONTIGUOUS WALL LOCATION SHOWN INDICATIVE ONLY AND IS TO BE CONFIRMED BY OTHERS.

SUSPENDED DRAINAGE TO BE DESIGNED BY OTHERS. ALLOWANCE TO BE MADE FOR CONNECTING PROPOSED UNDERGROUND DRAINAGE WHERE SHOWN.

VEHICLE MOVEMENTS WITHIN THE DEVELOPMENT TO BE CONFIRMED BY OTHERS.

ALL DRAINAGE WITHIN TRAFFICKED AREAS TO HAVE A LOADING CLASS OF D400 OR GREATER.

BUILDING AND EXTERNAL LAYOUTS ARE SUBJECT TO CHANGE AS THE SCHEME PROGRESSES.

NO EXTERNAL AREAS ARE TO DRAIN DIRECTLY ONTO THE ADOPTED HIGHWAY. INTERCEPTING DRAINAGE WILL BE REQUIRED TO PREVENT THIS.

EXTERNAL LEVELS TO FALL AWAY FROM BUILDINGS.

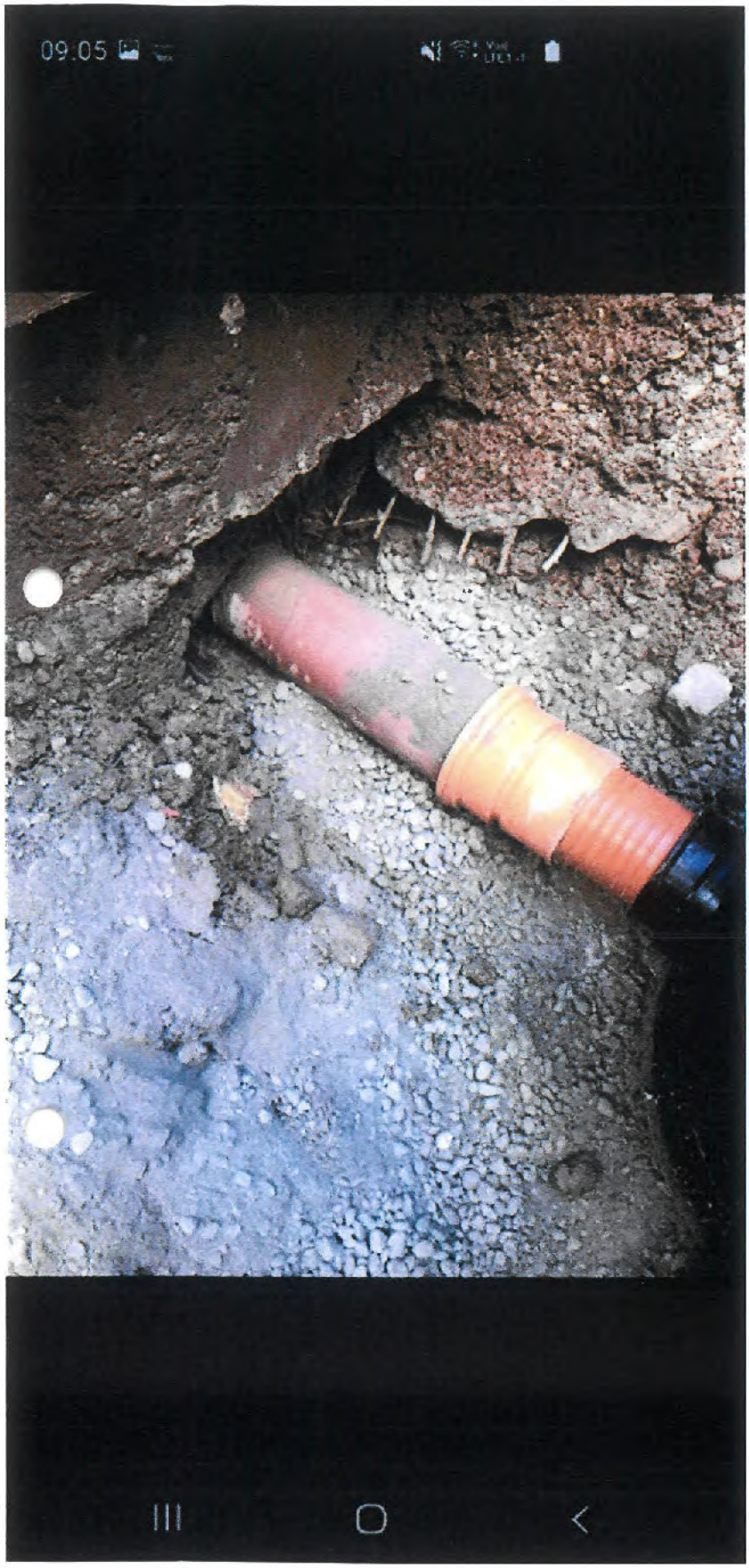
ALL BUILDING LEVELS AND ACCESS TO BASEMENT CAR PARK TO ACHIEVE MINIMUM LEVELS OF 26.9m AOD IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE FLOOD RISK ASSESSMENT.

DRAINAGE RUNS SHOWN GREY ARE TO BE INSTALLED AS PART OF A SEPARATE CONTRACT. ONLY DRAINAGE SHOWN IN COLOUR IS TO FORM PART OF THIS SCHEME.

THRESHOLD DRAINAGE HAS NOT BEEN SHOWN AS LEVELS ARE TO FALL AWAY FROM BUILDINGS HOWEVER SHOULD THIS BE A REQUIREMENT OF THE CLIENT THERE WILL BE ADDED AT THE NEXT STAGE.

M&E ENGINEER TO CONFIRM THAT SUSPENDED DRAINAGE CAN BE DRAINED VIA THE CONNECTIONS PROVIDED.

LINEAR DRAINAGE CHANNELS SHOWN AND ASSOCIATED ACCESS BOXES ARE TO SIT ABOVE STRUCTURAL SLABS. HOLES IN ACCESS BOXES TO BE CUT ON SITE TO ALLOW FOR OUTLET/INLET PIPES TO BE CONNECTED. THE CONNECTIONS ARE TO BE SEALED APPROPRIATELY. ALL LINEAR CHANNELS ARE TO BE LOADING CLASS D400 UNLESS NOTED OTHERWISE.


09:05

Q04	DRAINAGE INSPECTION - MANHOLE

CONTRACT	St Johns	CONTRACT NO	201	DATE	02.11.2020
LOCATION	Drainage manhole FW03 G&S			ITEM	FW03

NO	CHECK LIST ITEM	DATE	ADANA	DATE	PRINCIPAL CONTRACTOR
1	INVERT LEVEL (24.111m)	02.11.2020	LS	02-11-20	
2	TYPE - PPIC, BRICK, CONCRETE	02.11.2020	LS	02-11-20	
3	CHANNEL – 225mm	02.11.2020	LS	02-11-20	
5	CONCRETE SPECIFICATION	02.11.2020	LS	02-11-20	
6	DIAMETER OF RING (600mm PPIC)	02.11.2020	LS	02-11-20	
7	STEP IRONS REQUIRED? YES / NO	02.11.2020	LS	02-11-20	
9	JOINTING MATERIAL BETWEEN CHAMBER RINGS	02.11.2020	LS	02-11-20	
10	SIZE OF ACCESS HOLE IN COVER SLAB	02.11.2020	LS	02-11-20	
11	CHANNELS & BENCHING COMPLETE	To Follow	LS		
12	LIFTING HOLES IN CHAMBER RING FILLED	To Follow	LS		
13	CONCRETE SEGMENTS / BRICKWORK CLASS	To Follow	LS		
14	*FRAME & COVER TO CORRECT SPECIFICATION*	02.11.2020	LS	02-11-20	
15	WITNESSED BY BUILDING INSPECTOR	N/A	N/A		
16	ALL DRAIN STOPPERS ARE REMOVED	02.11.2020	LS	02-11-20	

COMMENTS: Air Test To Be Carried Out & Completed at a later date

NAME	SIGNED	DATE
Lee Smith	Lee Smith	02.11.2020

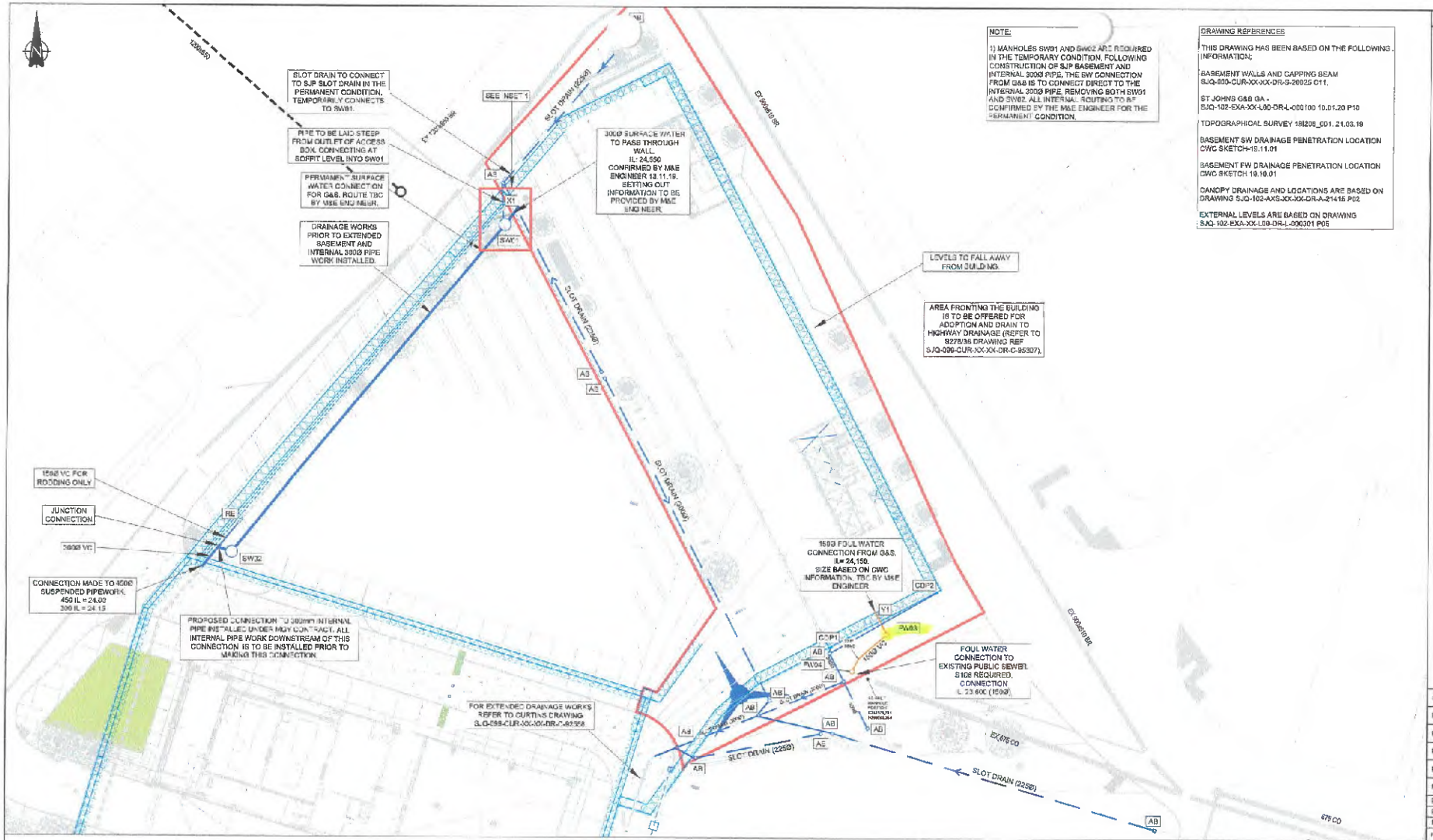
FOR AND ON BEHALF OF ADANA CONSTRUCTION

NAME	SIGNED	DATE
DAVID FASIOS		02.11.20.

FOR AND ON BEHALF OF UNDUGATE.

8/10/15 Ver.1

KEY
LD – TO BE COMPLETED AT LATER DATE



NOTE:

1) MANHOLES SW01 AND SW02 ARE REQUIRED IN THE TEMPORARY CONDITION. FOLLOWING CONSTRUCTION OF SJP BASEMENT AND INTERNAL 300Ø PIPE, THE SW CONNECTION FROM G&S IS TO CONNECT DIRECT TO THE INTERNAL 300Ø PIPE, REMOVING BOTH SW01 AND SW02. ALL INTERNAL ROUTING TO BE CONFIRMED BY THE M&E ENGINEER FOR THE PERMANENT CONDITION.

DRAWING REFERENCES

THIS DRAWING HAS BEEN BASED ON THE FOLLOWING INFORMATION;

BASEMENT WALLS AND CAPPING BEAM SJQ-000-CUR-XX-XX-DR-S-20025 C11.

ST JOHNS G&S GA - SJQ-102-EXA-XX-L00-DR-L-000100 10.01.20 P10

TOPOGRAPHICAL SURVEY 181208_001. 21.03.19

BASEMENT SW DRAINAGE PENETRATION LOCATION CWC SKETCH-19.11.01

BASEMENT FW DRAINAGE PENETRATION LOCATION CWC SKETCH 19.10.01

CANOPY DRAINAGE AND LOCATIONS ARE BASED ON DRAWING SJQ-102-AXS-XX-XX-DR-A-21415 P02

EXTERNAL LEVELS ARE BASED ON DRAWING SJQ-102-EXA-XX-L00-DR-L-000301 P05

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
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KEY:

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- SUSPENDED DRAINAGE SHOWN INDICATIVE. TO BE DESIGNED BY OTHERS.
- CANOPY ROOF DRAINAGE POINT WITH 100mm CONNECTION. CDP3
- RODDING EYE RE

DRAWING TO BE READ IN CONJUNCTION WITH NOTES DRAWING SJQ-102-CUR-00-XX-DR-C-92501.

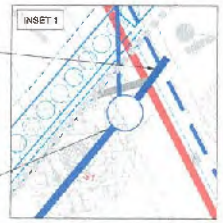
Rev	Description	Date	By	Chk
C01	ISSUED FOR CONSTRUCTION	16.09.20	AH	CD
P08	ADDITION OF FW04 TO RESTRUCTURE EXTERNAL FOUL ROUTE. SLOT DRAINAGE ADJUSTMENTS.	11.09.20	CD	CD
P07	TEMPORARY DRAINAGE AMENDED TO PERMANENT	28.07.20	AH	CD
P06	MINOR UPDATE	14.05.20	CD	CD
P05	STAGE 4 UPDATE- NEW PLOT BOUNDARY	30.03.20	AH	CD
P04	STAGE 4 UPDATE- INCLUSION OF CANOPY DRAINAGE	23.12.19	AH	CD
P03	STAGE 4	03.12.19	AH	CD
P02	STAGE 3 DRAFT UPDATE	03.11.19	AH	CD
P01	STAGE 3 DRAFT	18.07.19	CD	CD

REFER TO THE ABOVE LAYOUT FOR REFERENCE LOCATIONS

PROPOSED INVERT LEVEL TO PASS THROUGH BASEMENT WALL					
REF	IL (mAOD)	USE	U/S DIA (mm)	D/S DIA (mm)	D/S CHAMBER
X1	24.550	SURFACE	300	300	SW01
Y1	24.250	FOUL	150	150	FW03

LETTER REFERENCES REFER TO PIPEWORK PASSING THROUGH THE CAPPING BEAM. WATERPROOFING DETAIL TO BE CONSIDERED WHICH HAS BEEN AGREED WITH CSSW.

PROPOSED MANHOLE SCHEDULE - REFER TO SFA 7th EDITION											
MH REF	EASTING	NORTHING	CL (mAOD)	IL (mAOD)	DEPTH TO SOFFIT	OS PIPE DIA (mm)	MH DIA (mm)	MH TYPE	COVER SIZE (mm)	COVER CLASS	COMMENTS
SW01	383134.907	398141.466	26.600	24.500	1.800	300	1500	TYPE 2	600 X 600	D400	CATCH-PIT TYPE WITH 500mm SUMP
SW02	383101.035	398100.678	26.300	24.160	1.840	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 500mm SUMP
FW03	383182.076	398090.818	26.750	24.110	2.490	150	600	TYPE 3	600 X 600	D400	NON ENTRY. 350 DIA REDUCER CAP REQUIRED.
FW04	383177.819	398086.259	26.750	23.952	2.648	150	600	TYPE 3	600 X 600	D400	NON ENTRY. 350 DIA REDUCER CAP REQUIRED.



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Refer:

STAGE 5

Project:

ST JOHNS

Drg Title:

BLOCK C - G&S
PROPOSED DRAINAGE LAYOUT

Size	Date	Lower for	Assigned by	Checked by
A1	02.11.18	CD	CD	CG
Scale: 1:250				

Project No	Originator	Zone	Level	Type	Role	Number	Revision
SJQ -	102 -	CUR -	00 -	XX -	DR -	C -	92500 - C01

09:05

Q04	DRAINAGE INSPECTION - MANHOLE

CONTRACT	St Johns	CONTRACT NO	201	DATE	05.11.2020
LOCATION	Drainage manhole FW04 G&S		ITEM	FW04	

NO	CHECK LIST ITEM	DATE	ADANA	DATE	PRINCIPAL CONTRACTOR
1	INVERT LEVEL (23.604m)	05.11.2020	LS	05-11-20	
2	TYPE - PPIC, BRICK, CONCRETE	05.11.2020	LS	05-11-20	
3	CHANNEL – 225mm	05.11.2020	LS	05-11-20	
5	CONCRETE SPECIFICATION	05.11.2020	LS	05-11-20	
6	DIAMETER OF RING (600mm PPIC)	05.11.2020	LS	05-11-20	
7	STEP IRONS REQUIRED? YES / NO	05.11.2020	LS	05-11-20	
9	JOINTING MATERIAL BETWEEN CHAMBER RINGS	05.11.2020	LS	05-11-20	
10	SIZE OF ACCESS HOLE IN COVER SLAB	05.11.2020	LS	05-11-20	
11	CHANNELS & BENCHING COMPLETE	To Follow	LS		
12	LIFTING HOLES IN CHAMBER RING FILLED	To Follow	LS		
13	CONCRETE SEGMENTS / BRICKWORK CLASS	To Follow	LS		
14	*FRAME & COVER TO CORRECT SPECIFICATION*	05.11.2020	LS	05-11-20	
15	WITNESSED BY BUILDING INSPECTOR	N/A	N/A		
16	ALL DRAIN STOPPERS ARE REMOVED	05.11.2020	LS	05-11-20	

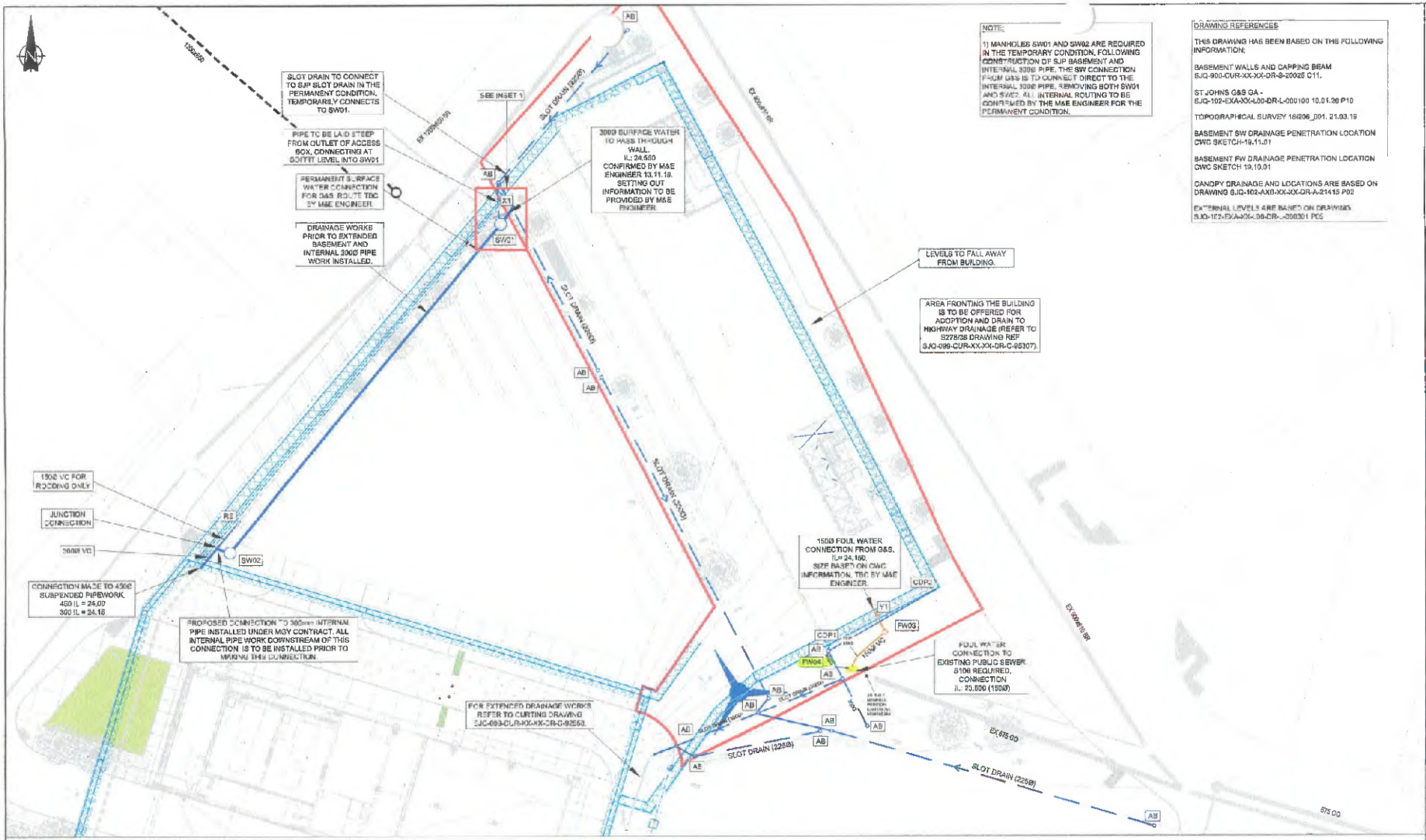
COMMENTS: Air Test To Be Carried Out & Completed at a later date

NAME	SIGNED	DATE
Lee Smith	Lee Smith	05.11.2020
FOR AND ON BEHALF OF ADANA CONSTRUCTION		

NAME	SIGNED	DATE
DAVID IAZDA		05.11.20.
FOR AND ON BEHALF OF	LENDLEASE.	

8/10/15 Ver.1

KEY
LD – TO BE COMPLETED AT LATER DATE



NOTE:

1) MANHOLES SW01 AND SW02 ARE REQUIRED IN THE TEMPORARY CONDITION, FOLLOWING CONSTRUCTION OF SJP BASEMENT AND INTERNAL 300Ø PIPE. THE SW CONNECTION FROM G&S IS TO CONNECT DIRECT TO THE INTERNAL 300Ø PIPE, REMOVING BOTH SW01 AND SW02. ALL INTERNAL ROUTING TO BE CONFIRMED BY THE M&E ENGINEER FOR THE PERMANENT CONDITION.

DRAWING REFERENCES

THIS DRAWING HAS BEEN BASED ON THE FOLLOWING INFORMATION:

BASEMENT WALLS AND CAPPING BEAM SJQ-900-CUR-XX-XX-DR-S-20025 C11.

ST JOHNS G&S GA - SJQ-102-EXA-XX-L00-DR-L-000100 10.01.20 P10

TOPOGRAPHICAL SURVEY 16/206_001. 21.03.19

BASEMENT SW DRAINAGE PENETRATION LOCATION CWC SKETCH-19.11.01

BASEMENT FW DRAINAGE PENETRATION LOCATION CWC SKETCH 19.10.01

CANOPY DRAINAGE AND LOCATIONS ARE BASED ON DRAWING SJQ-102-AXB-XX-XX-DR-A-21415 P02

EXTERNAL LEVELS ARE BASED ON DRAWINGS SJQ-102-EXA-XX-L00-DR-L-000301 P05

GENERAL NOTES:

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- RODDING EYE RE

DRAWING TO BE READ IN CONJUNCTION WITH NOTES. DRAWING SJQ-102-CUR-00-XX-DR-C-92501.

Rev	Description	Date:	By:	Chkd
C01	ISSUED FOR CONSTRUCTION	16.09.20	AH	CD
P06	ADDITION OF FW04 TO RECONFIGURE EXTERNAL FOUL ROUTE, SLOT DRAINAGE ADJUSTMENTS.	11.09.20	CD	CD
P07	TEMPORARY DRAINAGE AMENDED TO PERMANENT	28.07.20	ATL	CD
P06	MINOR UPDATE	12.05.20	CD	CD
P05	STAGE 4 UPDATE- NEW PLOT BOUNDARY	03.02.20	AH	CD
P04	STAGE 4 UPDATE- INCLUSION OF CANOPY DRAINAGE	20.12.19	AH	CD
P03	STAGE 4	06.12.19	AH	CD
P02	STAGE 4 DRAFT UPDATE	08.11.19	AH	CD
P01	STAGE 4 DRAFT	16.07.19	CD	CD

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0161 236 2591
manchester@curtins.com
www.curtins.com

Status: STAGE 5

Project: ST JOHNS

Dwg Title: BLOCK C - G&S PROPOSED DRAINAGE LAYOUT

Size	Date	Drawn By	Designed By	Checked By
A1	08.11.19	CD	CD	CG

Scale: 1:250

Project No. | Originator | Zone | Level | Type | Role | Number | Revision

SJQ - 102 - CUR - 00 - XX - DR - C - 92500 - C01

REFER TO THE ABOVE LAYOUT FOR REFERENCE LOCATIONS

PROPOSED INVERT LEVEL TO PASS THROUGH BASEMENT WALL					
REF	IL (mAOD)	USE	U/S DIA (mm)	D/S DIA (mm)	D/S CHAMBER
X1	24.550	SURFACE	300	300	SW01
Y1	24.150	FOUL	150	150	FW03

LETTER REFERENCES REFER TO PIPEWORK PASSING THROUGH THE CAPPING BEAM. WATERPROOFING DETAIL TO BE CONSIDERED WHICH HAS BEEN AGREED WITH CSSW.

PROPOSED MANHOLE SCHEDULE - REFER TO SFA 7th EDITION											
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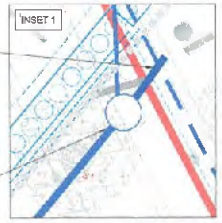
SW02	385110.815	398130.678	26.300	24.160	1.840	300	1500	TYPE 2	600 X 600	D400	CATCH PIT TYPE WITH 500mm SUMP
FW03	385182.076	398050.818	26.750	24.110	2.490	150	600	TYPE 3	600 X 600	D400	NON ENTRY, 350 DIA REDUCER CAP REQUIRED.
FW04	385177.819	398086.299	26.750	23.952	2.648	150	600	TYPE 3	600 X 600	D400	NON ENTRY, 350 DIA REDUCER CAP REQUIRED.

PERMANENT SURFACE WATER DRAINAGE DETAILED AND SETTING OUT BY M&E DESIGNER.

TEMPORARY DRAINAGE WORKS PRIOR TO EXTENDED BASEMENT DETAILED BY CURTINS AS NOTED.



DRAINAGE RUNS, LINEAR DRAINS, GULLIES ETC LOCATIONS HAVE BEEN DESIGNED BASED ON LEVELS PROVIDED BY THE LANDSCAPE ARCHITECT (SJQ-102-EXA-XX-L00-DR-L-000301 P05). CURTINS TO BE NOTIFIED IF CHANGES ARE MADE TO THIS. CHANGES MAY RESULT IN THE NEED FOR ADDITIONAL RUNS.

DRAINAGE DESIGN SUBJECT TO CSSW PODIUM WATERPROOFING DESIGN (GULLIES UNDER REVIEW).

WHERE ACCESS BOXES ARE TO BE CONNECTED VIA PIPED SECTION, CORING INTO ACCESS BOXES REQUIRED.

CONTIGUOUS WALL LOCATION SHOWN INDICATIVE ONLY AND IS TO BE CONFIRMED BY OTHERS.

SUSPENDED DRAINAGE TO BE DESIGNED BY OTHERS. ALLOWANCE TO BE MADE FOR CONNECTING PROPOSED UNDERGROUND DRAINAGE WHERE SHOWN.

VEHICLE MOVEMENTS WITHIN THE DEVELOPMENT TO BE CONFIRMED BY OTHERS.

ALL DRAINAGE WITHIN TRAFFICKED AREAS TO HAVE A LOADING CLASS OF D400 OR GREATER.

BUILDING AND EXTERNAL LAYOUTS ARE SUBJECT TO CHANGE AS THE SCHEME PROGRESSES.

NO EXTERNAL AREAS ARE TO DRAIN DIRECTLY ONTO THE ADOPTED HIGHWAY. INTERCEPTING DRAINAGE WILL BE REQUIRED TO PREVENT THIS.

EXTERNAL LEVELS TO FALL AWAY FROM BUILDINGS.

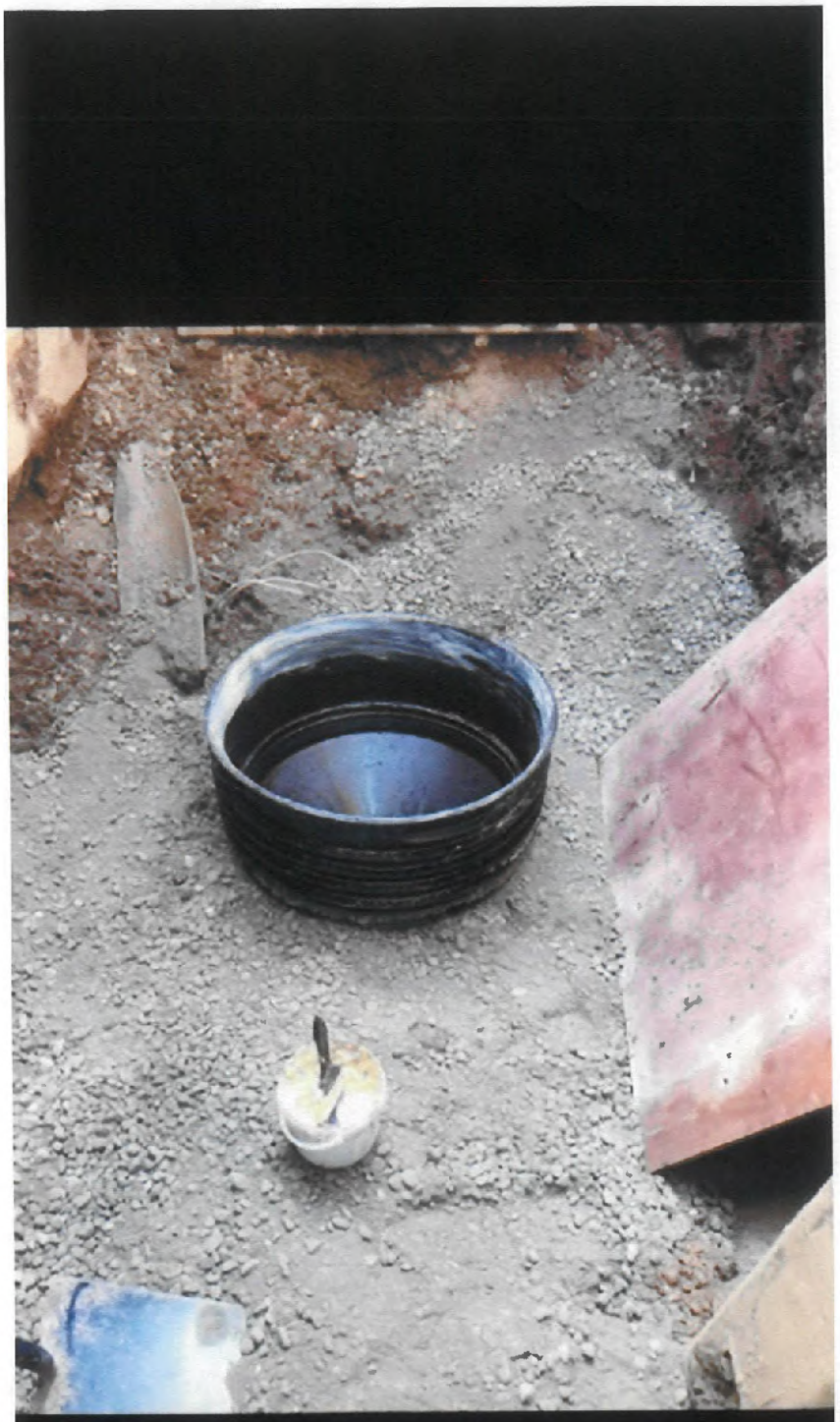
ALL BUILDING LEVELS AND ACCESS TO BASEMENT CAR PARK TO ACHIEVE MINIMUM LEVELS OF 26.0m AOD IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE FLOOD RISK ASSESSMENT.

DRAINAGE RUNS SHOWN GREY ARE TO BE INSTALLED AS PART OF A SEPARATE CONTRACT. ONLY DRAINAGE SHOWN IN COLOUR IS TO FORM PART OF THIS SCHEME.

THRESHOLD DRAINAGE HAS NOT BEEN SHOWN AS LEVELS ARE TO FALL AWAY FROM BUILDINGS HOWEVER SHOULD THIS BE A REQUIREMENT OF THE CLIENT THESE WILL BE ADDED AT THE NEXT STAGE.

M&E ENGINEER TO CONFIRM THAT SUSPENDED DRAINAGE CAN BE DRAINED VIA THE CONNECTIONS PROVIDED.

LINEAR DRAINAGE CHANNELS SHOWN AND ASSOCIATED ACCESS BOXES ARE TO SIT ABOVE STRUCTURAL SLABS. HOLES IN ACCESS BOXES TO BE CUT ON SITE TO ALLOW FOR OUTLET/INLET PIPES TO BE CONNECTED. THE CONNECTIONS ARE TO BE SEALED APPROPRIATELY. ALL LINEAR CHANNELS ARE TO BE LOADING CLASS D400 UNLESS NOTED OTHERWISE.



Q04	DRAINAGE INSPECTION - MANHOLE

CONTRACT	St Johns	CONTRACT NO	201	DATE	04.08.2020
LOCATION	Drainage manhole SW01			ITEM	SW01

NO	CHECK LIST ITEM	DATE	ADANA	DATE	PRINCIPAL CONTRACTOR
1	INVERT LEVEL	04.08.2020	LS	11/9/20	[illegible]
2	TYPE - PPIC, BRICK, CONCRETE	04.08.2020	LS	11/9/20	[illegible]
3	CHANNEL – CATCH PIT	04.08.2020	LS	11/9/20	[illegible]
5	CONCRETE SPECIFICATION	04.08.2020	LS	11/9/20	[illegible]
6	DIAMETER OF RING	04.08.2020 1.5m	LS	11/9/20	[illegible]
7	STEP IRONS REQUIRED? YES / NO	04.08.2020	LS	11/9/20	[illegible]
9	JOINTING MATERIAL BETWEEN CHAMBER RINGS (Rubber Seal)	04.08.2020	LS	11/9/20	[illegible]
10	SIZE OF ACCESS HOLE IN COVER SLAB	04.08.2020 600mm x 600mm	LS	11/9/20	[illegible]
11	CHANNELS & BENCHING COMPLETE	N/A	N/A	11/9/20	[illegible]
12	LIFTING HOLES IN CHAMBER RING FILLED	N/A	N/A	11/9/20	[illegible]
13	CONCRETE SEGMENTS / BRICKWORK CLASS	N/A	N/A	11/9/20	[illegible]
14	*FRAME & COVER TO CORRECT SPECIFICATION*	04.08.2020	LS	11/9/20	[illegible]
15	WITNESSED BY BUILDING INSPECTOR	04.08.2020	LS	11/9/20	[illegible]
16	ALL DRAIN STOPPERS ARE REMOVED	04.08.2020	LS	11/9/20	[illegible]

COMMENTS: Air Test To Be Carried Out & Completed at a later date

NAME	SIGNED	DATE
Lee Smith	Lee Smith	04.08.2020

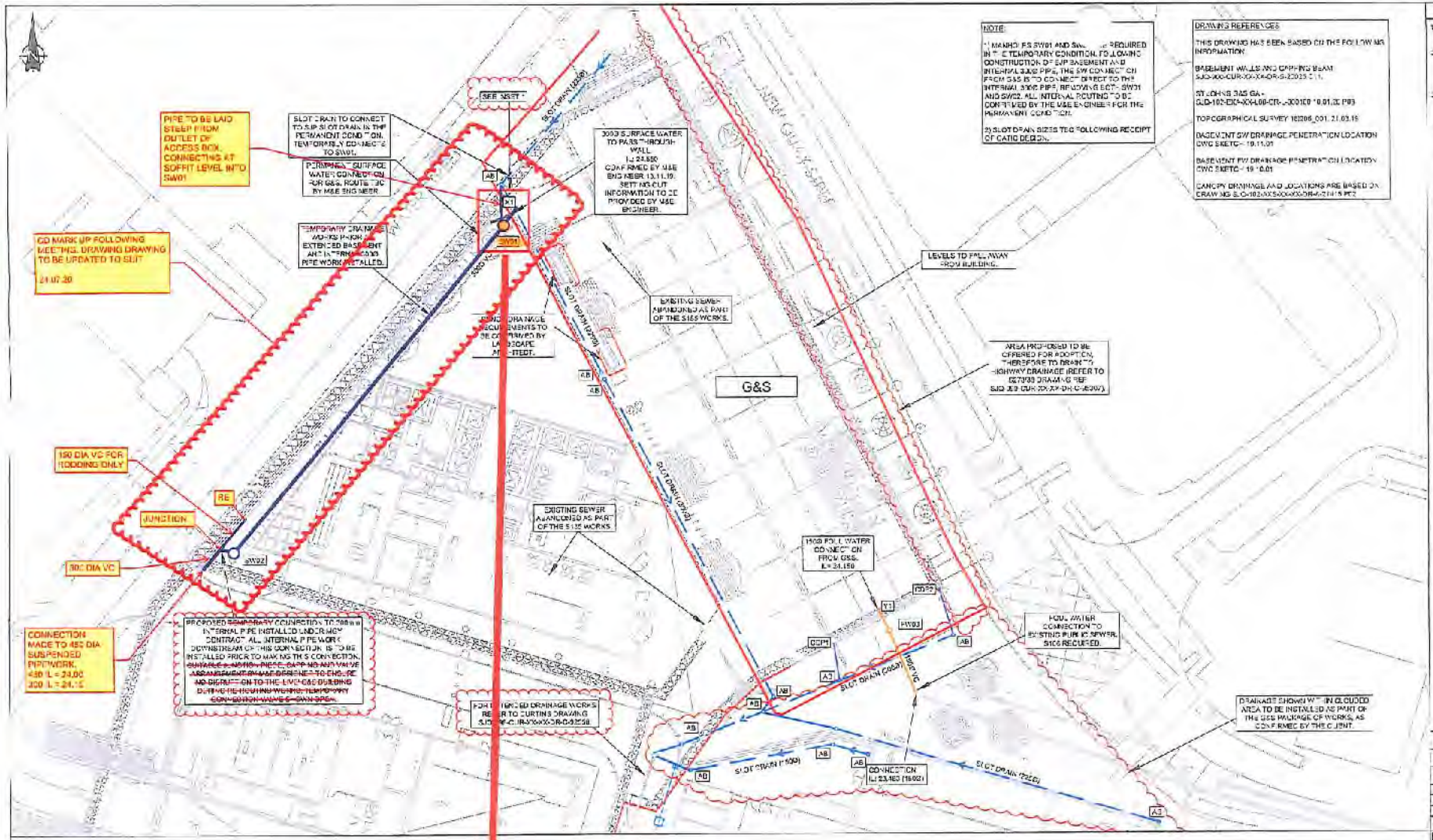
FOR AND ON BEHALF OF ADANA CONSTRUCTION

NAME	SIGNED	DATE
Sam Cay	[illegible]	11/9/20

FOR AND ON BEHALF OF Lendlease

8/10/15 Ver.1

KEY
LD – TO BE COMPLETED AT LATER DATE



REFER TO THE ABOVE LAYOUT FOR REFERENCE LOCATIONS

PROPOSED INVERT LEVEL TO PASS THROUGH BASEMENT WALL					
REF	IL (mAOD)	USE	D/S DIA (mm)	D/S DIA (mm)	D/S CHAMBER
X1	24.550	SURFACE	200	300	SW01
Y1	24.150	FOUL	150	150	FW03

PROPOSED MANHOLE SCHEDULE - REFER TO SFA 7th EDITION											
MH REF	EASTING	NORTHING	CL (mAOD)	IL (mAOD)	DEPTH TO SOFFIT	DS PIPE DIA (mm)	MH DIA (mm)	MH TYPE	COVER SIZE (mm)	COVER CLASS	COMMENTS
SW01		398141.456	26.500	24.500	1.870	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 300mm SUMP
SW02		398100.676	26.300	24.150	1.840	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 300mm SUMP
			26.750	24.110	2.460	150	600	TYPE 3	600 X 600	D400	NON ENTRY, 375 DIA PRODUCER CAP REQUIRED.

LETTER REFERENCES REFER TO PIPEWORK PASSING THROUGH THE COPING STONE WATERPROOFING DETAIL BE CONSIDERED WHICH HAS BEEN AGREED WITH CDS

INSET 1

TEMPORARY SURFACE WATER DRAINAGE DETAILED AND SETTING OUT BY MSE DESIGNER

JUNCTION PIECE, CAPPING AND VALVE ARRANGEMENT BY MSE DESIGNER TO ENSURE NO PERMANENT CHANGE THE 1 MP GAS BUILDING CURVE. REROUTING WORKS TEMPORARY CONNECTION VALVE SHOWN DASH

TEMPORARY DRAINAGE WORKS PRIOR TO EXTENDED BASEMENT DETAILED BY CURTINS AS NOTED

DRAINAGE RUNS SHOWN GREY ARE TO BE INSTALLED AS PART OF A SEPARATE CONTRACT. ONLY DRAINAGE SHOWN IN COLOUR IS TO FORM PART OF THIS SCHEME

DRAINAGE DESIGN SUBJECT TO GSW PODIUM WATERPROOFING DESIGN (GULLIES UNDER REVIEW).

W-BRS ACCESS BOXES ARE TO BE CONNECTED VIA PIPE SECTION, CORING INTO ACCESS BOXES REQUIRED.

CONTROL BUS WALL LOCATION SHOWN INDICATIVE ONLY AND IS TO BE CONFIRMED BY OTHERS.

SUSPENDED DRAINAGE TO BE DESIGNED BY OTHERS, ALLOWANCE TO BE MADE FOR CONNECTING PROPOSED UNDERGROUND DRAINAGE WHERE SHOWN.

VEHICLE MOVEMENTS WITHIN THE DEVELOPMENT TO BE CONFIRMED BY OTHERS.

ALL DRAINAGE WITHIN TRAFFICKED AREAS TO HAVE A LOADING CLASS OF D400 OR GREATER.

BUILDING AND EXTERNAL LAYOUTS ARE SUBJECT TO CHANGE AS THE SCHEME PROGRESSES.

NO EXTERNAL AREAS ARE TO DRAIN DIRECTLY ONTO THE ADOPTED HIGHWAY. INTERCEPTING DRAINAGE WILL BE REQUIRED TO PREVENT THIS.

EXTERNAL LEVELS TO FALL AWAY FROM BUILDINGS.

LINEAR DRAINAGE POSITIONS SHOWN INDICATIVE AND ARE SUBJECT TO RECEIPT OF FINAL LEVELS.

ALL BUILDING LEVELS AND ACCESS TO BASEMENT CAR PARK TO ACHIEVE MINIMUM LEVELS OF 26.5m AOD IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE FLOOD RISK ASSESSMENT.

ADDITIONAL DRAINAGE RUNS, LINEAR DRAINS, GULLIES ETC FOLLOWING RECEIPT OF EXTERNAL LEVEL DESIGN.

THRESHOLD DRAINAGE HAS NOT BEEN SHOWN AS LEVELS ARE TO FALL AWAY FROM BUILDINGS. HOWEVER SHOULD THIS BE A REQUIREMENT OF THE CLIENT THESE WILL BE ADDED AT THE NEXT STAGE.

MSE ENGINEER TO CONFIRM THAT SUSPENDED DRAINAGE CAN BE DRAINED VIA THE CONNECTIONS PROVIDED.

LINEAR DRAINAGE CHANNELS SHOWN AND ASSOCIATED ACCESS BOXES ARE TO SIT ABOVE STRUCTURAL SLABS. HOLES IN ACCESS BOXES TO BE CUT ON SITE TO ALLOW FOR OUTLET/INLET PIPES TO BE CONNECTED. THE CONNECTION ARE TO BE SEALED APPROPRIATELY. ALL LINEAR CHANNELS ARE TO BE LOADING CLASS D400 UNLESS NOTED OTHERWISE.

GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION. NUMERATION, ALL DIMENSIONS MUST BE CHECKED/VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE

KEY:

- BLOCK C BOUNDARY TBC
- PROPOSED SURFACE WATER MASTERPLAN DRAINAGE.
- PROPOSED FOUL WATER MASTERPLAN DRAINAGE.
- PROPOSED SURFACE WATER DRAINAGE.
- PROPOSED FOUL WATER DRAINAGE.
- PROPOSED GATIC SLOT DRAIN OR SIMILAR APPROVED.
- PROPOSED GATIC ACCESS BOX. AB
- SUSPENDED DRAINAGE SHOWN INDICATIVE, TO BE DESIGNED BY OTHERS.
- TEMPORARY SW DRAINAGE PRIOR TO EXTENDED SUP BASEMENT WORKS.
- CANOPY ROOF DRAINAGE POINT WITH 100mm CONNECTION. CDPO

DRAWING TO BE READ IN CONJUNCTION WITH NOTES DRAWING SJD-JBB-CUR-XX-DR-C-92531.

P06	MINOR UPDATE	12.05.21	CD	CD
P05	STAGE 4 UPDATE - NEW PLOT BOUNDARY	03.12.20	AH	CD
P04	STAGE 4 UPDATE - ADDITION OF CANOPY DRAINAGE	25.12.19	AH	CD
P03	STAGE 4	06.12.19	AH	CD
P02	STAGE 4 DRAFT UPDATE	08.11.19	AH	CD
P01	STAGE 4 DRAFT	1.03.19	CD	CD
Rev	Description	Date	By	Chkd

curtins

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www.curtins.com

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Client: STAGE 4

Project: ST JOHNS

Drawing Title: BLOCK C - G&S PROPOSED DRAINAGE LAYOUT

Size	Date	Drawn by	Designed by	Checked by
A1	28.11.18	CD	CD	CD

Scale: 1:250

Project No.	Originator	Zone	Level	Type	Role	Number	Suitability	Revision
SJC	103	CUR	00	XX	DR	C	92500	P06

MH SW01

Q04	DRAINAGE INSPECTION - MANHOLE

CONTRACT	St Johns	CONTRACT NO	201	DATE	04.08.2020
LOCATION	Drainage manhole SW02			ITEM	SW02

NO	CHECK LIST ITEM	DATE	ADANA	DATE	PRINCIPAL CONTRACTOR
1	INVERT LEVEL	04.08.2020	LS	11/9/20	[illegible]
2	TYPE - PPIC, BRICK, CONCRETE	04.08.2020	LS	11/9/20	[illegible]
3	CHANNEL – CATCH PIT	04.08.2020	LS	11/9/20	[illegible]
5	CONCRETE SPECIFICATION	04.08.2020	LS	11/9/20	[illegible]
6	DIAMETER OF RING	04.08.2020 1.5m	LS	11/9/20	[illegible]
7	STEP IRONS REQUIRED? YES / NO	04.08.2020	LS	11/9/20	[illegible]
9	JOINTING MATERIAL BETWEEN CHAMBER RINGS (Rubber Seal)	04.08.2020	LS	11/9/20	[illegible]
10	SIZE OF ACCESS HOLE IN COVER SLAB	04.08.2020 600mm x 600mm	LS	11/9/20	[illegible]
11	CHANNELS & BENCHING COMPLETE	N/A	N/A	11/9/20	[illegible]
12	LIFTING HOLES IN CHAMBER RING FILLED	N/A	N/A	11/9/20	[illegible]
13	CONCRETE SEGMENTS / BRICKWORK CLASS	N/A	N/A	11/9/20	[illegible]
14	*FRAME & COVER TO CORRECT SPECIFICATION*	04.08.2020	LS	11/9/20	[illegible]
15	WITNESSED BY BUILDING INSPECTOR	04.08.2020	LS	11/9/20	[illegible]
16	ALL DRAIN STOPPERS ARE REMOVED	04.08.2020	LS	11/9/20	[illegible]

COMMENTS: Air Test To Be Carried Out & Completed at a later date

NAME	SIGNED	DATE
Lee Smith	Lee Smith	04.08.2020

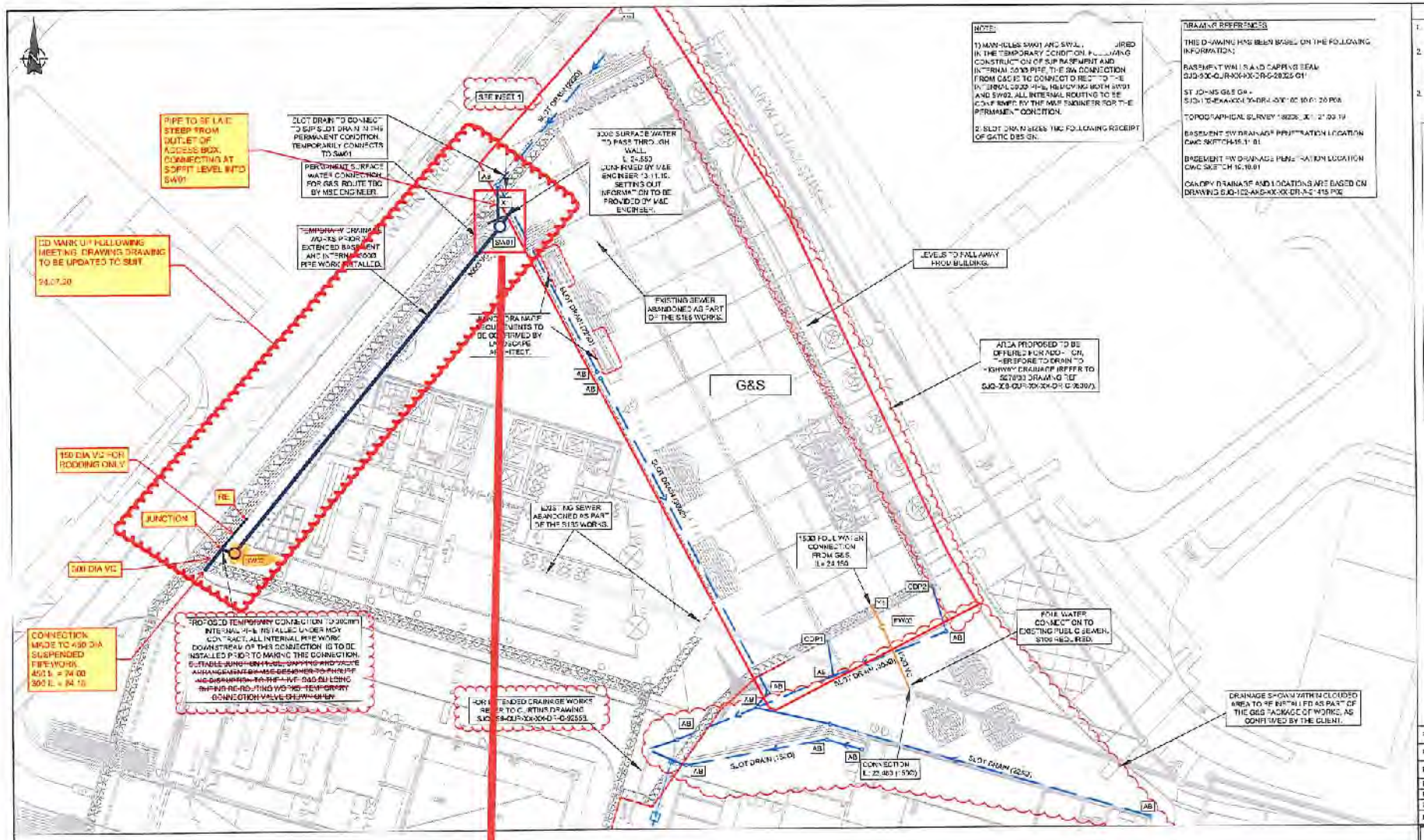
FOR AND ON BEHALF OF ADANA CONSTRUCTION

NAME	SIGNED	DATE
Sam Coy	[illegible]	11/9/20

FOR AND ON BEHALF OF Lendlease

8/10/15 Ver.1

KEY
LD – TO BE COMPLETED AT LATER DATE



NOTE:

1) MANHOLES SW01 AND SW02 ... IRED IN THE TEMPORARY CONDITION, FOLLOWING CONSTRUCTION OF SUP BASEMENT AND INTERNAL 5000 PIPE, THE SW CONNECTION FROM G&S IS TO CONNECT DIRECT TO THE INTERNAL 5000 PIPE, HIGHWAY MANHOLE SW01 AND SW02. ALL INTERNAL ROUTING TO BE CONFIRMED BY THE M&E ENGINEER FOR THE PERMANENT CONDITION.

2) SLOT DRAIN SIZES TBC FOLLOWING RECEIPT OF GATIC DESIGN.

DRAWING REFERENCES

THIS DRAWING HAS BEEN BASED ON THE FOLLOWING INFORMATION:

BASEMENT WALLS AND CAPPING BEAM SJQ-XX-QUR-XX-XX-DR-C-20025-01

ST JOHNS G&S GA - SJQ-100-EXA-XX-XX-DR-L-XX-00-10-01-20 P06

TOPOGRAPHICAL SURVEY 180206_XX_21.03.19

BASEMENT SW DRAINAGE PENETRATION LOCATION CMC SKETCH 16.11.01

BASEMENT FW DRAINAGE PENETRATION LOCATION CMC SKETCH 16.10.01

CANOPY DRAINAGE AND LOCATIONS ARE BASED ON DRAWING SJQ-102-AKS-XX-XX-DR-A-21415 P02

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY ABSENCES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN millimetres UNLESS NOTED OTHERWISE.

KEY:

- BLOCK C BOUNDARY TBC
- PROPOSED SURFACE WATER MASTERPLAN DRAINAGE.
- PROPOSED FOUL WATER MASTERPLAN DRAINAGE.
- PROPOSED SURFACE WATER DRAINAGE.
- PROPOSED FOUL WATER DRAINAGE.
- PRO-CAST GATIC SLOT DRAIN OR SIMILAR APPROVED.
- PROPOSED GATIC ACCESS BOX. AC
- SUSPENDED DRAINAGE SHOWN AND CAPTIVE, TO BE DESIGNED BY OTHERS
- TEMPORARY SW DRAINAGE PRIOR TO EXTENDED SUP BASEMENT WORKS.
- CANOPY ROOF DRAINAGE POINT WITH 100mm CONNECTION. CDP2

DRAWING TO BE READ IN CONJUNCTION WITH VC ... DRAWING SJQ-TCD-QUR-00-XX-DR-C-92300

Rev	Description	Date	By	Chk
P06	MINOR UPDATE	17.05.21	JD	CC
P05	STAGE 4 DRAFT - NEW PLOT BOUNDARY	01.02.21	AH	CC
P04	STAGE 4 DRAFT - INCLUSION OF CANOPY DRAINAGE	22.12.20	AH	CC
P03	STAGE 4	20.12.20	AH	CC
P02	STAGE 4 DRAFT UPDATE	05.11.20	AH	CC
P01	STAGE 4 DRAFT	13.07.20	CC	CC

curtins

STAGE 4

ST JOHNS

BLOCK C - G&S
PROPOSED DRAINAGE LAYOUT

Date	Drawn by	Designed by	Checked by
01.11.11	JD	JD	CC

Scale: 1:250

SJQ - 100 - QUR - 00 - XX - DR - C - 92600 - P06

KEEN TO THE ABOVE LAYOUT FOR REFERENCE LOCATIONS

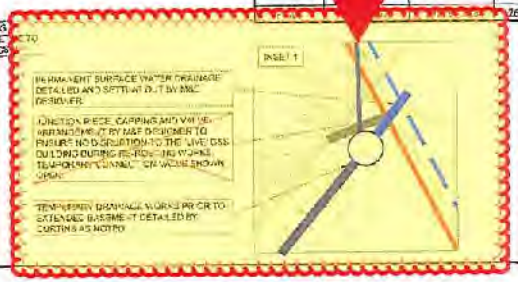
PROPOSED INVERT LEVEL TO PASS THROUGH BASEMENT WALL

REF	IL (mAOD)	USE	W/S DIA (mm)	D/S DIA (mm)	D/S CHAMBER
X1	24.550	SURFACE	300	300	SW01
Y1	24.150	FOUL	150	150	FW03

LETTER REFERENCES REFER TO PIPEWORK PASSING THROUGH THE CAPPING BEAM. WATERPROOFING DETAIL TO BE CONSIDERED WITH CONTRACTOR AGREED WITH CONSULTANT

PROPOSED MANHOLE SCHEDULE - REFER TO SFA 7th EDITION

MH REF	EXISTING	NORTHING	CL (mAOD)	IL (mAOD)	DEPTH TO SOFFIT	DS PIPE DIA (mm)	MH DIA (mm)	MH TYPE	COVER SIZE (mm)	COVER CLASS	COMMENTS
SW01		398141.456	26.600	24.500	1.805	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 500mm SUMP
SW02		398100.678	26.300	24.150	1.840	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 500mm SUMP
			26.750	24.110	2.490	150	600	TYPE 3	600 X 600	D400	NON ENTRY. 350 DIA REDUCER CAP REQUIRED.



DRAINAGE RUNS SHOWN GREY ARE TO BE INSTALLED AS PART OF A SEPARATE CONTRACT. ONLY DRAINAGE SHOWN IN COLOUR IS TO FORM PART OF THIS SCHEME.

DRAINAGE DESIGN IS SUBJECT TO CBRW PONDING WATERPROOFING DESIGN (SULLES UNDER REVIEW).

WHERE ACCESS BOXES ARE TO BE CONNECTED VIA PIPED SECTION, CORING INTO ACCESS BOXES REQUIRED.

CONTIGUOUS WALL LOCATION SHOWN INDICATIVE ONLY AND BITS TO BE CONFIRMED BY OTHERS.

SUSPENDED DRAINAGE TO BE DESIGNED BY OTHERS. ALLOWANCE TO BE MADE FOR CONNECTING PROPOSED UNDERGROUND DRAINAGE WHERE SHOWN.

VEHICLE MOVEMENTS WITHIN THE DEVELOPMENT TO BE CONFIRMED BY OTHERS.

ALL DRAINAGE WITHIN TRAFFICKED AREAS TO HAVE A LOADING CLASS OF D400 OR SIMILAR.

BUILDING AND EXTERNAL LAYOUTS ARE SUBJECT TO CHANGE AS THE SCHEME PROGRESSES.

NO EXTERNAL AREAS ARE TO DRAIN DIRECTLY ONTO THE ADOPTED HIGHWAY. INTERCEPTING DRAINAGE WILL BE REQUIRED TO PREVENT THIS.

EXTERNAL LEVELS TO FALL AWAY FROM BUILDINGS.

LINEAR DRAINAGE POSITIONS SHOWN INDICATIVE AND ARE SUBJECT TO RECEIPT OF FINAL LEVELS.

ALL BUILDING LEVELS AND ACCESS TO BASEMENT CAR PARK TO ACHIEVE MINIMUM LEVELS OF 25.0m AOD IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE FLOOD RISK ASSESSMENT.

ADDITIONAL DRAINAGE RUNS, LINEAR DRAINS, CULLES ETC FOLLOWING RECEIPT OF EXTERNAL LEVEL DESIGN.

THRESHOLD DRAINAGE HAS NOT BEEN SHOWN AS LEVELS ARE TO FALL AWAY FROM BUILDINGS. HOWEVER SHOULD THIS BE A REQUIREMENT OF THE CLIENT THESE WILL BE ADDED AT THE NEXT STAGE.

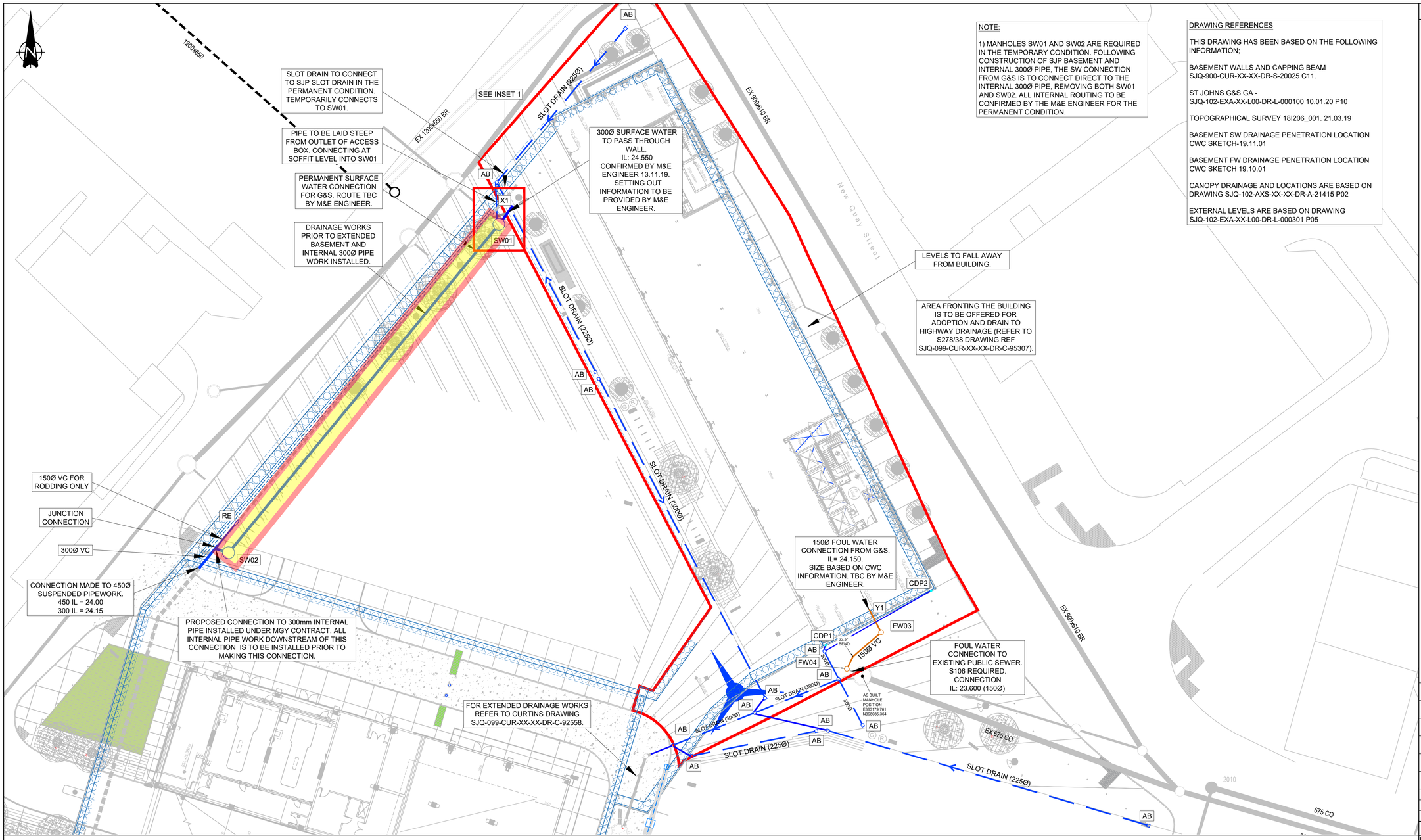
M&E ENGINEER TO CONFIRM THAT SUSPENDED DRAINAGE CAN BE DRAINED VIA THE CONNECTIONS PROVIDED.

LINEAR DRAINAGE CHANNELS SHOWN AND ASSOCIATED ACCESS BOXES ARE TO BE ABOVE STRUCTURAL SLABS. HOLES IN ACCESS BOXES TO BE CUT ON SITE TO ALLOW FOR OUTLET INVERT PIPES TO BE CONNECTED. THE CONNECTIONS ARE TO BE SEALED APPROPRIATELY. ALL LINEAR CHANNELS ARE TO BE LOADING CLASS D400 OR ESS NOTED OTHERWISE.

MH SW02

Appendix E

As Installed Drainage CCTV Survey (Surface Water)



NOTE:

1) MANHOLES SW01 AND SW02 ARE REQUIRED IN THE TEMPORARY CONDITION. FOLLOWING CONSTRUCTION OF SJP BASEMENT AND INTERNAL 300Ø PIPE, THE SW CONNECTION FROM G&S IS TO CONNECT DIRECT TO THE INTERNAL 300Ø PIPE, REMOVING BOTH SW01 AND SW02. ALL INTERNAL ROUTING TO BE CONFIRMED BY THE M&E ENGINEER FOR THE PERMANENT CONDITION.

DRAWING REFERENCES

THIS DRAWING HAS BEEN BASED ON THE FOLLOWING INFORMATION;

BASEMENT WALLS AND CAPPING BEAM SJQ-900-CUR-XX-XX-DR-S-20025 C11.

ST JOHNS G&S GA - SJQ-102-EXA-XX-L00-DR-L-000100 10.01.20 P10

TOPOGRAPHICAL SURVEY 18I206_001. 21.03.19

BASEMENT SW DRAINAGE PENETRATION LOCATION CWC SKETCH-19.11.01

BASEMENT FW DRAINAGE PENETRATION LOCATION CWC SKETCH 19.10.01

CANOPY DRAINAGE AND LOCATIONS ARE BASED ON DRAWING SJQ-102-AXS-XX-XX-DR-A-21415 P02

EXTERNAL LEVELS ARE BASED ON DRAWING SJQ-102-EXA-XX-L00-DR-L-000301 P05

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

KEY:

- BLOCK C BOUNDARY TBC
- PROPOSED SURFACE WATER MASTERPLAN DRAINAGE.
- PROPOSED FOUL WATER MASTERPLAN DRAINAGE.
- PROPOSED SURFACE WATER DRAINAGE.
- PROPOSED FOUL WATER DRAINAGE.
- PROPOSED GATIC SLOT DRAIN OR SIMILAR APPROVED.
- PROPOSED GATIC ACCESS BOX. AB
- SUSPENDED DRAINAGE SHOWN INDICATIVE. TO BE DESIGNED BY OTHERS.
- CANOPY ROOF DRAINAGE POINT WITH 100mm CONNECTION. CDP0
- RODDING EYE RE

DRAWING TO BE READ IN CONJUNCTION WITH NOTES DRAWING SJQ-102-CUR-00-XX-DR-C-92501.

Rev:	Description:	Date:	By:	Chkd:
C01	ISSUED FOR CONSTRUCTION	16.09.20	AH	CD
P08	ADDITION OF FW04 TO RECONFIGURE EXTERNAL FOUL ROUTE. SLOT DRAINAGE ADJUSTMENTS.	11.09.20	CD	CD
P07	TEMPORARY DRAINAGE AMENDED TO PERMANENT	28.07.20	ATL	CD
P06	MINOR UPDATE	12.05.20	CD	CD
P05	STAGE 4 UPDATE- NEW PLOT BOUNDARY	05.02.20	AH	CD
P04	STAGE 4 UPDATE- INCLUSION OF CANOPY DRAINAGE	20.12.19	AH	CG
P03	STAGE 4	06.12.19	AH	CD
P02	STAGE 4 DRAFT UPDATE	08.11.19	AH	CD
P01	STAGE 4 DRAFT	19.07.19	CD	CG

REFER TO THE ABOVE LAYOUT FOR REFERENCE LOCATIONS

PROPOSED INVERT LEVEL TO PASS THROUGH BASEMENT WALL.

REF	IL (mAOD)	USE	U/S DIA (mm)	D/S DIA (mm)	D/S CHAMBER
X1	24.550	SURFACE	300	300	SW01
Y1	24.150	FOUL	150	150	FW03

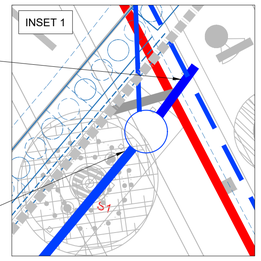
LETTER REFERENCES REFER TO PIPEWORK PASSING THROUGH THE CAPPING BEAM. WATERPROOFING DETAIL TO BE CONSIDERED WHICH HAS BEEN AGREED WITH CSSW.

PROPOSED MANHOLE SCHEDULE - REFER TO SFA 7th EDITION

MH REF	EASTING	NORTHING	CL (mAOD)	IL (mAOD)	DEPTH TO SOFFIT	DS PIPE DIA (mm)	MH DIA (mm)	MH TYPE	COVER SIZE (mm)	COVER CLASS	COMMENTS
SW01	383134.607	398141.456	26.600	24.500	1.800	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 500mm SUMP
SW02	383101.035	398100.678	26.300	24.160	1.840	300	1500	TYPE 2	600 X 600	D400	CATCHPIT TYPE WITH 500mm SUMP
FW03	383182.076	398090.818	26.750	24.110	2.490	150	600	TYPE 3	600 X 600	D400	NON ENTRY. 350 DIA REDUCER CAP REQUIRED.
FW04	383177.819	398086.259	26.750	23.952	2.648	150	600	TYPE 3	600 X 600	D400	NON ENTRY. 350 DIA REDUCER CAP REQUIRED.

PERMANENT SURFACE WATER DRAINAGE DETAILED AND SETTING OUT BY M&E DESIGNER.

TEMPORARY DRAINAGE WORKS PRIOR TO EXTENDED BASEMENT DETAILED BY CURTINS AS NOTED.



DRAINAGE RUNS, LINEAR DRAINS, GULLIES ETC LOCATIONS HAVE BEEN DESIGNED BASED ON LEVELS PROVIDED BY THE LANDSCAPE ARCHITECT (SJQ-102-EXA-XX-L00-DR-L-000301 P05). CURTINS TO BE NOTIFIED IF CHANGES ARE MADE TO THIS. CHANGES MAY RESULT IN THE NEED FOR ADDITIONAL RUNS.

DRAINAGE DESIGN SUBJECT TO CSSW PODIUM WATERPROOFING DESIGN (GULLIES UNDER REVIEW).

WHERE ACCESS BOXES ARE TO BE CONNECTED VIA PIPED SECTION. CORING INTO ACCESS BOXES REQUIRED.

CONTIGUOUS WALL LOCATION SHOWN INDICATIVE ONLY AND IS TO BE CONFIRMED BY OTHERS.

SUSPENDED DRAINAGE TO BE DESIGNED BY OTHERS. ALLOWANCE TO BE MADE FOR CONNECTING PROPOSED UNDERGROUND DRAINAGE WHERE SHOWN.

VEHICLE MOVEMENTS WITHIN THE DEVELOPMENT TO BE CONFIRMED BY OTHERS.

ALL DRAINAGE WITHIN TRAFFICKED AREAS TO HAVE A LOADING CLASS OF D400 OR GREATER.

BUILDING AND EXTERNAL LAYOUTS ARE SUBJECT TO CHANGE AS THE SCHEME PROGRESSES.

NO EXTERNAL AREAS ARE TO DRAIN DIRECTLY ONTO THE ADOPTED HIGHWAY. INTERCEPTING DRAINAGE WILL BE REQUIRED TO PREVENT THIS.

EXTERNAL LEVELS TO FALL AWAY FROM BUILDINGS.

ALL BUILDING LEVELS AND ACCESS TO BASEMENT CAR PARK TO ACHIEVE MINIMUM LEVELS OF 26.9m AOD IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE FLOOD RISK ASSESSMENT.

DRAINAGE RUNS SHOWN GREY ARE TO BE INSTALLED AS PART OF A SEPARATE CONTRACT. ONLY DRAINAGE SHOWN IN COLOUR IS TO FORM PART OF THIS SCHEME.

THRESHOLD DRAINAGE HAS NOT BEEN SHOWN AS LEVELS ARE TO FALL AWAY FROM BUILDINGS HOWEVER SHOULD THIS BE A REQUIREMENT OF THE CLIENT THESE WILL BE ADDED AT THE NEXT STAGE.

M&E ENGINEER TO CONFIRM THAT SUSPENDED DRAINAGE CAN BE DRAINED VIA THE CONNECTIONS PROVIDED.

LINEAR DRAINAGE CHANNELS SHOWN AND ASSOCIATED ACCESS BOXES ARE TO SIT ABOVE STRUCTURAL SLABS. HOLES IN ACCESS BOXES TO BE CUT ON SITE TO ALLOW FOR OUTLET/INLET PIPES TO BE CONNECTED. THE CONNECTIONS ARE TO BE SEALED APPROPRIATELY. ALL LINEAR CHANNELS ARE TO BE LOADING CLASS D400 UNLESS NOTED OTHERWISE.

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Birmingham • Bristol • Cambridge • Cardiff • Douglas • Dublin • Edinburgh • Glasgow • Kendal • Leeds • Liverpool • London • Manchester • Nottingham

Status: STAGE 5

Project: ST JOHNS

Drg Title: BLOCK C - G&S PROPOSED DRAINAGE LAYOUT

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	08.11.18	CD	CD	CG
Scale: 1:250				

Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:
SJQ -	102 -	CUR-	00 -	XX -	DR -	C - 92500 -	C01

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2nd Floor Peel House Peel Road, Skelmersdale
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ben.pearce@teamdrainageuk.com

Section Inspection - 30/07/2021 - LINE AX

Section	Inspection	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
58	58	30/07/21	11:36	ST JOHNS PROJECT	No Rain Or Snow	Yes	LINE AX

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
MIKE	Not Specified	Not Specified	Not Specified	Not Specified	1

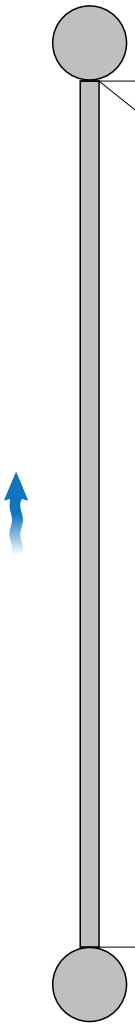
Town or Village:	Manchester	**Inspection Direction:**	Upstream	**Upstream Node:**	LINE A
Road:	Water St	**Inspected Length:**	39.48 m	**Upstream Pipe Depth:**	
Location:	Property with buildings	**Total Length:**	39.48 m	**Downstream Node:**	MH01
Surface Type:		**Joint Length:**	0.00 m	**Downstream Pipe Depth:**	1.930 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	300 mm
Year Constructed:		**Pipe Material:**	Polyvinyl chloride
Flow Control:	No flow control	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection of condition	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:344

Depth: 1.93 m
MH01



LINE A
Depth: m

Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	MH	Start node type, manhole, reference number: MH01: U.S LINE A	00:00:19	MH01 US LINE A_0-00m_	
0.00	WL	Water level, 5% of the vertical dimension	00:00:21	MH01 US LINE A_0-00m_	
39.48	MHF	Finish node type, manhole, reference number: LINE A: MH02	00:04:21	MH01 US LINE A_39-48m	

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	**STR Peak**	**STR Mean**	**STR Total**	**STR Grade**	**SER No. Def**	**SER Peak**	**SER Mean**	**SER Total**	**SER Grade**
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

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Section Pictures - 30/07/2021 - LINE AX

Section	Inspection Direction	PLR	Client`s Job Ref	Contractor`s Job Ref
58	Upstream	LINE AX	ST JOHNS PROJECT	LEND LEASE

MH01 US LINE A_0-00m_113825.jpg, 00:00:19, 0.00 m
Start node type, manhole, reference number: MH01, U.S LINE A

MH01 US LINE A_0-00m_113832.jpg, 00:00:21, 0.00 m
Water level, 5% of the vertical dimension

MH01 US LINE A_39-48m_114243.jpg, 00:04:21, 39.48 m
Finish node type, manhole, reference number: LINE A, MH02

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Section Inspection - 30/07/2021 - LINE AX

Section	Inspection	Date	Time	Client`s Job Ref	Weather	Pre Cleaned	PLR
58	58	30/07/21	11:36	ST JOHNS PROJECT	No Rain Or Snow	Yes	LINE AX

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative
MIKE	Not Specified	Not Specified	Not Specified	Not Specified	1

Town or Village:	Manchester	**Inspection Direction:**	Upstream	**Upstream Node:**	LINE A
Road:	Water St	**Inspected Length:**	39.48 m	**Upstream Pipe Depth:**	
Location:	Property with buildings	**Total Length:**	39.48 m	**Downstream Node:**	MH01
Surface Type:		**Joint Length:**	0.00 m	**Downstream Pipe Depth:**	1.930 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	300 mm
Year Constructed:		**Pipe Material:**	Polyvinyl chloride
Flow Control:	No flow control	**Lining Type:**	No Lining
Inspection Purpose:	Routine inspection of condition	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:344

Depth: 1.93 m
MH01

Position [m]	Code	Observation	MPEG	Photo
0.00	MH	Start node type, manhole, reference number: MH01: U.S LINE A	00:00:19	MH01 US LINE A_0-00m_
0.00	WL	Water level, 5% of the vertical dimension	00:00:21	MH01 US LINE A_0-00m_
39.48	MHF	Finish node type, manhole, reference number: LINE A: MH02	00:04:21	MH01 US LINE A_39-48m

LINE A
Depth: m

Appendix F

Land Drainage Consent (Manchester City Council)

MANCHESTER
CITY COUNCIL

Manchester Quays
Development Ltd.
c/o Allied London
No. 1 Spinningfields
Level 12
1 Hardman Square
Manchester
M3 3EB

FAO: Miss Chloe Grimsley

Manchester City Council
Flood Risk Management Team
Capital Programme Division
Corporate Services Department
PO Box 532
Town Hall
Manchester
M60 2LA

Contact: Esther Goodship

Tel: 0161 219 6713

Fax: 0161 274 7103

Email: floodriskmanagement@ manchester.gov.uk

Our ref: MCC038/05/2019

Date: 10 May 2019

Dear Miss Grimsley,

Application for Ordinary Watercourse Land Drainage Consent Works for 2 No. surface outfall pipe connection into canal basin.

Thank you for your application for Ordinary Watercourse Land Drainage Consent received by Manchester City Council on 21 March 2019.

I confirm that your proposals for the permanent works are acceptable to Manchester City Council. I enclose consent number **MCC038/05/2019** issued under Section 23 of the Land Drainage Act 1991.

Please notify this authority no less than seven days before commencement and upon completion of the works, via the email contact details above, quoting the above consent number for reference.

Yours sincerely

Esther Goodship
Flood Risk Engineer

MANCHESTER CITY COUNCIL

Ordinary Watercourse Land Drainage Consent

Land Drainage Act 1991

Name:	**Manchester Quays Development Ltd.**
Consent applying to:	**St Johns**
Consent Number:	**MCC038/05/2019**
Effective from:	**10 May 2019**

Introduction

Land Drainage Consents are required by virtue of the Land Drainage Act 1991. The following activities on an Ordinary (non-main) Watercourse require Local Authority Consent:

Under Section 23 of the Land Drainage Act 1991

- The erection or alteration of any mill dam, weir or other like obstruction to the flow of any watercourse
- The erection or alteration of any culvert that would be likely to affect the flow of any watercourse

Under Sections 17 and 20(2) of the Land Drainage Act 1991

- Any drainage works carried out by a local authority against flooding in connection with any watercourse

Under Section 61F Land Drainage Act 1991 (Inserted by Schedule 22 Environment Act 1995)

- The operation of any drainage works, under the control of any Internal Drainage Board or local authority, so as to manage the level of water in a watercourse for the purposes of facilitating spray irrigation.

Note

Consent under the above legislation is required irrespective of whether the works are permanent or temporary.

Contraventions

In relation to Ordinary Watercourses, the Council can under Section 24 of the Land Drainage Act 1991 serve a legal notice requiring the person to abate the nuisance within a specified time. Failure to abide by such a notice can result in Manchester City Council carrying out the necessary remedial work and seeking to recover costs.

Land Drainage Act 1991

Land Drainage Consent
Control of works affecting watercourses and/or flood defences
Consent number **MCC038/05/2019**

To: **Manchester Quays Development Ltd.**

Manchester City Council, in exercise of its powers under Section 23 of the Land Drainage Act 1991 and subject to the conditions attached, hereby grants its consent in relation to the works or operations described in this Consent.

Watercourse:	**Canal Basin adjacent Grey Irwell**
Location:	**Water Street, Manchester**
Map reference:	**SJ 83034 98050**
Description of works	**2 x 525mm concrete pipes with safety grille and base scour protection within existing tow path wall.**

as detailed on plans and sections

Drg Ref:	**SJQ-099-CUR-XX-XX-DR-C-92550 Rev P06 Proposed Drainage Layout** **SJQ-099-CUR-XX-XX-DR-C-92572 Rev P06 Proposed Bridge Infill Plan and Section** **Method Statement 008 Rev B (ADANA Construction)** **Risk Assessment SW Outfall under Water Street 10a Rev A**

Manchester City Council does not accept any responsibility for the design and construction of the works referred hereto and any liability for any loss or damage which may arise out of their design, construction, maintenance or use.

This Consent shall come into effect on
Date: **10 May 2019**

Signed on behalf of Manchester City Council

Esther Goodship
Engineer

Date of signing:

10 May 2019

Conditions

This consent is granted with the following conditions:

General

- Connection to the existing canal basin, scour protection and safety grille shall be strictly in accordance with the approved plans, drawings, calculations, specifications and other documents and proceed entirely in accordance with the approved method statement.
- Works should be arranged to ensure there is no increase in flood risk to third parties.
- Manchester City Council does not accept any responsibility for the design and construction of the works that are the subject of this Consent and any liability for any loss or damage which may arise out of their design, construction, maintenance or use.
- It is the responsibility of the applicant to ensure that the consent / permission of any owners and occupiers affected by the works is duly obtained.
- This Consent does not remove from the applicant the necessity to obtain other licences, consents, approvals or permissions (including planning permission) which may be required in law or in order to comply with any duties or responsibilities for conservation or protection of the environment.
- This Consent does not confer any rights of entry or rights over property

Timing

1. This consent is valid for two years from the date of issue.

Construction/Temporary Works

- Taking all reasonable precautions during the undertaking of the works so as not to obstruct, impede or interfere with the flow of water in, into or out of the watercourse.
- Manchester City Council may choose to permit minimal obstruction to flows during construction but these temporary restrictions must not increase flood risk to others and they must be capable of being overtopped in higher flows.
- Works must be undertaken fully in accordance with PPG5, the pollution prevention guidelines on works or maintenance in or near water. These guidelines are important and comprehensive and should be studied carefully by those contemplating works.
- Should any pollution problems occur on site the Environment Agency must be informed immediately on 0800 807060 and Manchester City Council also informed.
- Wet concrete must not be released into the watercourse because of the adverse impact.
- Material used for backfilling must be inert and not contain any material that could potentially leach out into the watercourse.
- There may be stated restriction(s) on working periods because of bird activity (including nesting)
- There may be stated restriction(s) on working periods because of specific flora.
- Netting and other arrangements must be used to ensure that debris does not fall into the watercourse.
- No excavated material or debris arising from the construction of the works shall be disposed of on the site without the prior approval of Manchester City Council.

Other Information

- Upon completion of the works all debris and surplus materials must be removed from the site of the works and the existing canal basin left in a stable condition.
- Notice in writing must be given immediately by the applicant Manchester City Council upon completion of the works.
- As built drawings of the work must be provided to Manchester City Council as the Lead Local Flood Authority within four weeks of completion.

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