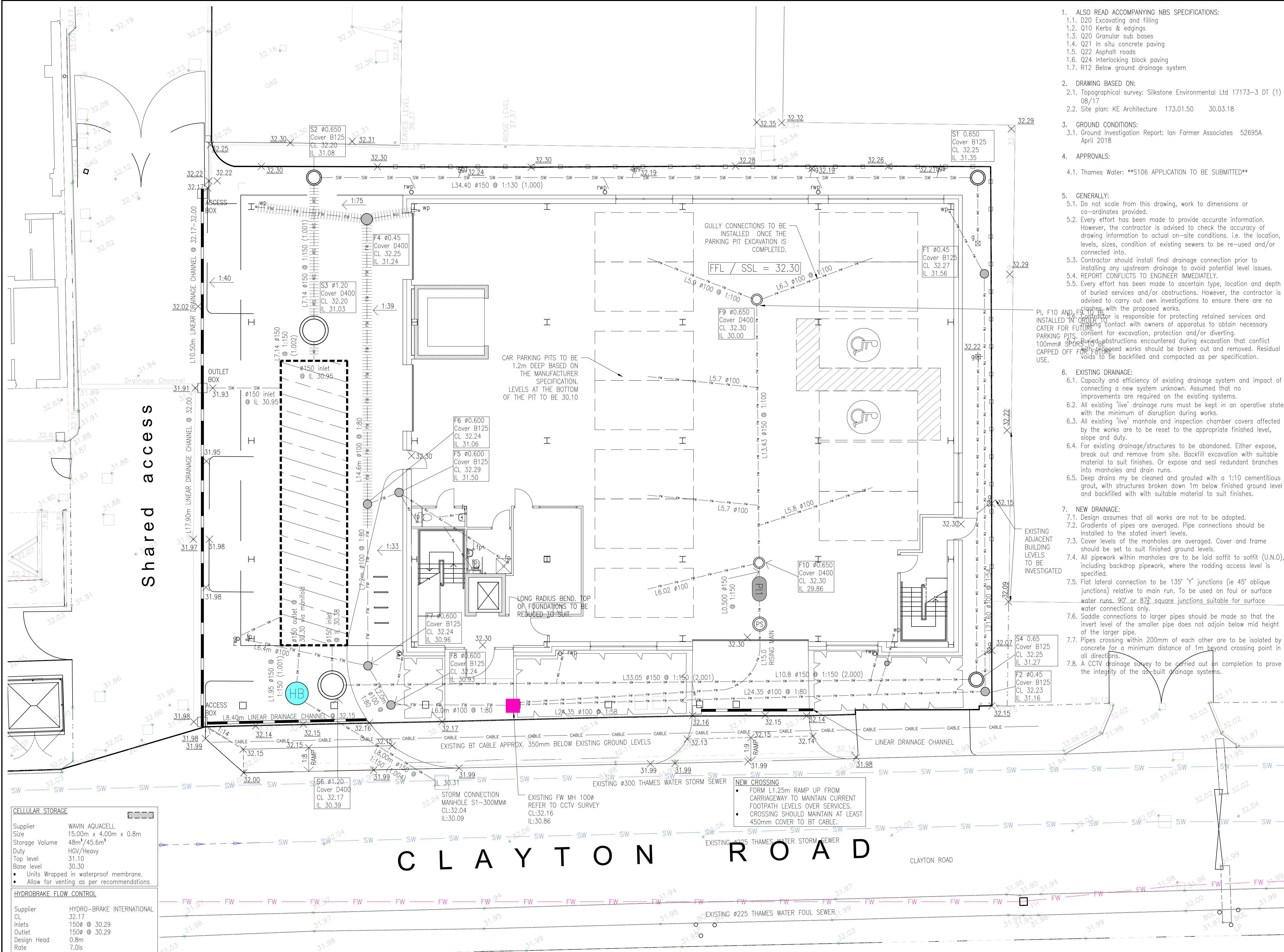




1. ALSO READ ACCOMPANYING NBS SPECIFICATIONS:
- 1.1. D20 Excavating and filling
 - 1.2. Q10 Kerbs & edgings
 - 1.3. Q20 Granular sub bases
 - 1.4. Q21 In situ concrete paving
 - 1.5. Q22 Asphalt roads
 - 1.6. Q24 Interlocking block paving
 - 1.7. R12 Below ground drainage system
2. DRAWING BASED ON:
- 2.1. Topographical survey: Silkstone Environmental Ltd 17173-3 DT (1) 08/17
 - 2.2. Site plan: KE Architecture 173.01.50 30.03.18
3. GROUND CONDITIONS:
- 3.1. Ground Investigation Report: Ian Farmer Associates 52695A April 2018
4. APPROVALS:
- 4.1. Thames Water: **S106 APPLICATION TO BE SUBMITTED**
5. GENERALLY:
- 5.1. Do not scale from this drawing, work to dimensions or co-ordinates provided.
 - 5.2. Every effort has been made to provide accurate information. However, the contractor is advised to check the accuracy of drawing information to actual on-site conditions. i.e. the location, levels, sizes, condition of existing sewers to be re-used and/or connected into.
 - 5.3. Contractor should install final drainage connection prior to installing any upstream drainage to avoid potential level issues.
 - 5.4. REPORT CONFLICTS TO ENGINEER IMMEDIATELY.
 - 5.5. Every effort has been made to ascertain type, location and depth of buried services and/or obstructions. However, the contractor is advised to carry out own investigations to ensure there are no conflicts with the proposed works.
6. EXISTING DRAINAGE:
- 6.1. Capacity and efficiency of existing drainage system and impact of connecting a new system unknown. Assumed that no improvements are required on the existing systems.
 - 6.2. All existing 'live' drainage runs must be kept in an operative state with the minimum of disruption during works.
 - 6.3. All existing 'live' manhole and inspection chamber covers affected by the works are to be reset to the appropriate finished level, slope and duty.
 - 6.4. For existing drainage/structures to be abandoned. Either expose, break out and remove from site. Backfill excavation with suitable material to suit finishes. Or expose and seal redundant branches into manholes and drain runs.
 - 6.5. Deep drains may be cleaned and grouted with a 1:10 cementitious grout, with structures broken down 1m below finished ground level and backfilled with with suitable material to suit finishes.
7. NEW DRAINAGE:
- 7.1. Design assumes that all works are not to be adopted.
 - 7.2. Gradients of pipes are averaged. Pipe connections should be installed to the stated invert levels.
 - 7.3. Cover levels of the manholes are averaged. Cover and frame should be set to suit finished ground levels.
 - 7.4. All pipework within manholes are to be laid soffit to soffit (U.N.O), including backdrop pipework, where the radding access level is specified.
 - 7.5. Flat lateral connection to be 135° 'Y' junctions (ie 45° oblique junctions) relative to main run. To be used on foul or surface water runs. 90° or 87½ square junctions suitable for surface water connections only.
 - 7.6. Saddle connections to larger pipes should be made so that the invert level of the smaller pipe does not adjoin below mid height of the larger pipe.
 - 7.7. Pipes crossing within 200mm of each other are to be isolated by concrete for a minimum distance of 1m beyond crossing point in all directions.
 - 7.8. A CCTV drainage survey to be carried out on completion to prove the integrity of the as-built drainage systems.

RAINWATER DOWN PIPES rwp
Refer to:
• Architects plans for traditional rainwater system

Access:
• For direct below ground connections provide roddable access panel max. 0.6m above FFL.
• For terminations over gully ensure gully is roddable.

Below ground connection:
• Size to match downpipe size or min. 100ø.
• Max. 12m horizontal run to downstream connection.
• Laid no flatter than 1:80 unless noted otherwise on plans.
• Use plastic and concrete encase beneath slab.

FOUL WASTE PIPES fp wp
(soil vent pipe, stub stack, air admittance valve, appliance, back)
• WP ARE ASSUMED TO DISCHARGE ONLY PLANT CONDENSATE NOT SOLID WASTE.

Locations shown indicatively:
• Refer to Architects or MEP Consultants plans for above ground connection type and setting out.

Access:
• For direct below ground lateral connections provide roddable access panel max. 0.6m above FFL.
• Not required for terminations into inspection chamber.

Below ground connection:
• Size to match downpipe size or min. 100ø.
• Use short radius bend where vent pipe serves up to three storeys and long radius bend when serving over three storeys.
• Max. 12m horizontal run to downstream connection.
• Laid no flatter than 1:40 unless noted otherwise on plans.
• Use plastic and concrete encase beneath slab.

LEGEND

- EXISTING PRIVATE/PUBLIC FOUL WATER MANHOLE
- EXISTING PRIVATE/PUBLIC FOUL WATER PIPE
- NEW FOUL WATER PIPE
- NEW FOUL WATER MANHOLE
- rwp ROOF GRAVITY DOWN PIPE
- SITE BOUNDARY
- PROPOSED LEVELS
- EXISTING LEVELS
- EXISTING PRIVATE/PUBLIC STORM WATER MANHOLE
- EXISTING PRIVATE/PUBLIC STORM WATER PIPE
- NEW STORM WATER PIPE
- NEW HYDROBRAKE
- NEW STORM WATER INSPECTION CHAMBER
- NEW STORM WATER MANHOLE
- RA/OB LINEAR DRAINAGE CHANNEL
- PROPOSED CELLULAR STORAGE
- PROPOSED PETROL INTERCEPTOR
- PROPOSED PUMP

CELLULAR STORAGE	
Supplier	WAVIN AQUACELL
Size	15.00m x 4.00m x 0.8m
Storage Volume	48m³/45.6m³
Duty	HGV/Heavy
Top level	31.10
Base level	30.30
• Units Wrapped in waterproof membrane. • Allow for venting as per recommendations	
HYDROBRAKE FLOW CONTROL	
Supplier	HYDRO-BRAKE INTERNATIONAL
CL	32.17
Inlets	150ø @ 30.29
Outlet	150ø @ 30.29
Design Head	0.8m
Rate	7.0ls
PETROL INTERCEPTOR 1	
Supplier	Conder (or similar approved)
Spec.	CNSB3s/21 Class 1 by-pass
Area drained	148.52m²
IL in	ø150 @ 29.85
IL out	ø150 @ 29.80
Notes silt capacity / kiosk / high level alarm / Single phase power supply / vented.	

NEW DIRECT SW CONNECTION : S106 APPROVAL REQUIRED

- Invert level at point of connection based on CCTV survey.
- CONTRACTOR TO LOCATE AND CHECK INVERT LEVEL AT POINT OF CONNECTION WITH BRADBROOKS PRIOR TO COMMENCING ANY WORKS
- ø150mm storm connection from site into existing private storm chamber. Reform benching to suit and cap off redundant connections. Soffit to soffit connection. IL: 30.86
- No works to commence until S106 approval obtained.

NEW INDIRECT FW CONNECTION : S106 APPROVAL REQUIRED

- Invert level at point of connection based on CCTV survey.
- CONTRACTOR TO LOCATE AND CHECK INVERT LEVEL AT POINT OF CONNECTION WITH BRADBROOKS PRIOR TO COMMENCING ANY WORKS
- 100mmø foul connection from site into existing private foul chamber. Reform benching to suit and cap off redundant connections. Soffit to soffit connection. IL: 30.86
- No works to commence until S106 approval obtained.

FOR LEVELS PURPOSES ONLY

C1	PE	17.12.18	CONSTRUCTION ISSUE
T3	AK	08.06.18	AMENDED TO ARCHITECTS COMMENTS.
T2	AK	01.06.18	DRAINAGE STRATEGY AMENDED
M1	MLA	18.05.18	ISSUED FOR TENDER
Rev	Tech	Date	Description
Kingston Office 4th Floor, Neville House 52 Eden Street Kingston upon Thames Surrey, KT1 1BW United Kingdom Bradbrook Consulting T: +44 (0)20 8339 9006 E: info@bradbrookconsulting.com W: www.bradbrookconsulting.com Kingston, London, Dubai, Warrington			
Client TRIMLANE LTD			
Project Title MARTINSPEED CLAYTON ROAD, HAYES			
Drawing Title DRAINAGE STRATEGY			
Purpose of Issue Information ☐ Preliminary ☐ Approval ☐ Tender ☐ Construction ☐ Record Copy ☐			
First Issue Date MAY 18	Drawn By AK	Scale 1:100	Checked IL
Drawing Number 17-097/300	Rev. C1		