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dhanlon@bam.co.uk
www.bam.co.uk

BAM Self delivery Ground works package-drainage QA summary statement

Our Ref: HNW0322

Project name: Chorlton High School South

Client name: DfE

Person responsible for Quality assurance on this project:

Name

Ewan Bell

Building Control officer Name :

Jennifer Barrett <Jennifer.Barrett@jhai.co.uk>

Report	Date	Doc Ref: FS0765-BAM-ZZ-ZZ-RP-W-52001			
			Prepared	Reviewed	Approved
CHS- Drainage QA summary statement rev01	08/03/ 21	Name:	S. Jackson	E Bell	D Hanlon
		Signature:	<i>S Jackson</i> for and on behalf of Bam Construction (NW) Ltd	<i>E Bell</i>	<i>D Hanlon</i>

Introduction:

The new Chorlton high school South is located on Mauldeth Road West next to the Hough End centre.

The below ground drainage system has been designed by BDP consisting of surface and rainwater sources and foul water sources associated with the school buildings and surrounding landscaping areas within the site boundary

A below ground drainage specification was issued by BDP supplemented by drainage calculations and construction issue drawings.

Scope of below ground drainage works:

- Foul water drainage discharge stack and branch pipes
- Foul water drainage carrier pipes
- Foul water drainage manholes, inspection chambers, traps, and separators
- Foul water UU adopted manhole outfall
- Surface water drainage gullies, channel drain, stacks, and branch pipes
- Surface water drainage carrier pipes
- Surface water drainage manholes, inspection chambers, rodding points, traps, and separators
- Surface water drainage Sports pitch permeable surface land drainage
- Surface water drainage MUGA permeable surface discharge to impervious geotextile membrane
- Surface water drainage Surface water drainage Oil and petrol separator units-downstream defender
- Surface water drainage Stormwater attenuation tank
- Surface water drainage Vortex flow control manhole
- Surface water drainage outfall connection into EA culvert

Quality statement:

All drainage has been installed in accordance with the BDP construction issue specification and drawings. The quality management consisted of the drainage being installed by a competent ground works contractor, specialist sport pitch and attenuation tank sub-contractors appointed by BAM. The installation works were set out for line and level, as built positions recorded, and general workmanship monitored by BAM engineering staff with support from the subcontract supervisors.

Evidence of quality assurance checks and compliance for the activities can be found on the BAM internal document control systems consisting of Livelink and BIM 360. A nonexhaustive list as follows:

1. Survey equipment and instrument calibration records for pipe lasers and total stations
2. Material type verification in accordance with inspection and test plans
3. QA drainage check sheets including witnessing air tests of pipelines
4. Photographic evidence at hold points throughout the works
5. Verification reports by external parties
6. Building control inspections
7. UU adoption documentation for Foul water outfall
8. EA correspondence for surface water outfall
9. As built drawing
10. CCTV report and jetting activities

On completion and handover of the scheme the following QA items will have been executed and recorded as part of the quality assurance:

- Removal of debris and cleaning-flush rest bends and internal branch pipelines, remove silt and check for blockages by rodding at access points
- Final air/water testing
- Jetting operation to all carrier drains
- CCTV survey and report
- Final inspection
- Handover of MH lifting keys
- O&M documentation including manufacture's maintenance and user instructions

Appendix:

Examples of QA checks and compliance:

1. Survey equipment and instrument calibration records for pipe lasers and total stations

The first two images show 'Certificate of Conformity' forms for survey equipment. The first form is for a pipe laser, and the second is for a total station. Both forms include fields for Model No., Serial No., Certificate No., Date of Issue, and a signature line. The third image shows a 'Survey Equipment Log' table with columns for Date Tested, Tester, Signature, and Remarks. The table contains several rows of data, including dates like 24/04/20, 27/04/20, 22/06/20, and 24/07/20, and signatures.

Date Tested	Tester	Signature	Remarks
24/04/20	T. Hunt	[Signature]	
27/04/20	T. Hunt	[Signature]	
22/06/20	T. Hunt	[Signature]	
24/07/20	T. Hunt	[Signature]	

2. Sports pitch inspection and test plan inc land drainage record photos and materials verification certificate for filtered stone

PROJECT:CHSS		PROJECT N°:HNW0332		Inspection & Test Plan N°: BER001		Revision:00	
WORK ITEM: Asphalt/shockpad/carpet/sports equipment				LEGEND: Inspection Authorities: B - BAM S/C-Bernards ST=STRI Inspection Code: Hold PointH Notification PointN First Time OnlyX Approval RequiredA Information OnlyI Inspection percentage 10% InspectionR10 Inspection percentage 20% InspectionR20 Inspection percentage 100% InspectionR100 SurveillanceS			
LOCATION: 3G pitch							
SUB-CONTRACTOR: Bernards							
INSPECTION AND TEST PLAN							
00	Construction		2/11/2020	S.Jackson	2/11/2020		
REV	AMENDMENT	ORIGINAL	DATE	APPROVED	DATE		
AMENDMENT RECORD							

BAM INSPECTION AND TEST PLAN										
Item	Activity	Controlling Specification 190930_Chorton HSS_Sand Dressed Synthetic Turf Pitch Specification	Inspection		Verifying Docs		Inspection Authority			Remarks (This column can be used for general remarks or to sign off an activity as required)
			Method/ By Whom	Freq	Document			codes		
					Description	Held By	S/C	BAM	ST	
1.0	Handover of Area	Sub-Contract	Notification	Once	Notice to Commence	BAM	H	A		
2.0	S/C acceptance of work area	General Prelims section 7.8	S/C	Once	S/C Checklist	BAM	N	X		S/C to ensure that site conditions are appropriate for his Works
3.0	Drawings Approval	General Prelims Clause 11	For approval	each dwg	Category A,B,C	BAM	H	A	S	
4.0	Method Statement	General Prelims clause 8.3	For approval	each M/S	Category A,B,C	BAM	H	A		
5.0	Types of Materials	STRI specification	S/C	as reqd	S/C QA Checklist	S/C	N	S	A	Applicable to the following activities
6.0	Prep Works	STRI specification	S/C	Once	S/C QA Checklist	S/C	N	S		formation requirements, geotextile membrane drainage requirements, sub base fill requirements by BAM self delivery
7.0	Pitch drainage	STRI specification S404,405,406,407,408	BAM SD	Once	BAM QA Checklist	BAM	N	S		sub base 50mm final trimming level, bituminous macadam, shock pad, synthetic carpet
8.0	Geotextile separation layer	STRI specification S409	BAM SD	Once	BAM QA Checklist	BAM	N	S		
9.0	Kerb edgings	STRI specification S410	BAM SD	Once	BAM QA Checklist	BAM	N	S		
10.0	Aggregate sub base	STRI specification	BAM SD	Once	BAM QA Checklist	BAM	N	S		

BAM INSPECTION AND TEST PLAN											
Item	Activity	Controlling Specification 190930_Chorton HSS_Sand Dressed Synthetic Turf Pitch Specification	Inspection		Verifying Docs		Inspection Authority				Remarks (This column can be used for general remarks or to sign off an activity as required)
			Method/ By Whom	Freq	Document		codes				
					Description	Held By	S/C	BAM	ST		
		S411									
11.0	Porous macadam Base	STRI specification S412	BAM SD	Once	BAM QA Checklist	BAM	N	S			
12.0	Shockpad & synthetic carpet testing	STRI specification S414& 402	S/C	Once	Testing by an accredited test institute	BAM	N	S	S		
13.0	Laying	STRI specification	S/C	As reqd	S/C QA Checklist	S/C	N	S	S		
14.0	Cold Weather	STRI specification	S/C	As reqd	S/C QA Checklist	S/C	N	S			
15.0	Levels & Regularity	STRI specification	S/C	Once	S/C QA Checklist	BAM	N	S			
16.0	Shockpad & synthetic carpet testing	STRI specification S414& 402	S/C	Once	Testing by an accredited test institute	BAM	N	S	S		
17.0	Line markings,carpet fill & topdressing	STRI specification S415-417	S/C	Once	Testing by an	BAM	N	S	S		

BAM INSPECTION AND TEST PLAN										
Item	Activity	Controlling Specification 190930_Chorton HSS_Sand Dressed Synthetic Turf Pitch Specification	Inspection		Verifying Docs		Inspection Authority			Remarks (This column can be used for general remarks or to sign off an activity as required)
			Method/ By Whom	Freq	Document		codes			
					Description	Held By	S/C	BAM	ST	
					accredited test institute					
18.0	Field Performance testing	STRI specification S418	S/C	Once	Testing by an accredited test institute	BAM	N	S	S	
19.0	Record Documents	General Prelims	S/C	Once	As Built dwgs	BAM	R100	A		AS BUILT surveys to be produced by BAM engineer & Bernards
20.0	O&M's	General Prelims	S/C	Once	O&M Document	BAM	R100	A		
21.0	Handover	Sub-contract condition	BAM	Once	Letter of Completion	BAM	H	A	S	

NOTES FOR COMPLETION

- Sheet 1 - Self explanatory Index sheet
Sheet 2 - Header is self explanatory



Reduced Fines Sub Base

Dove Holes Quarry

Issued by Ian Phillips (Aggregates Technical Manager) May 2020

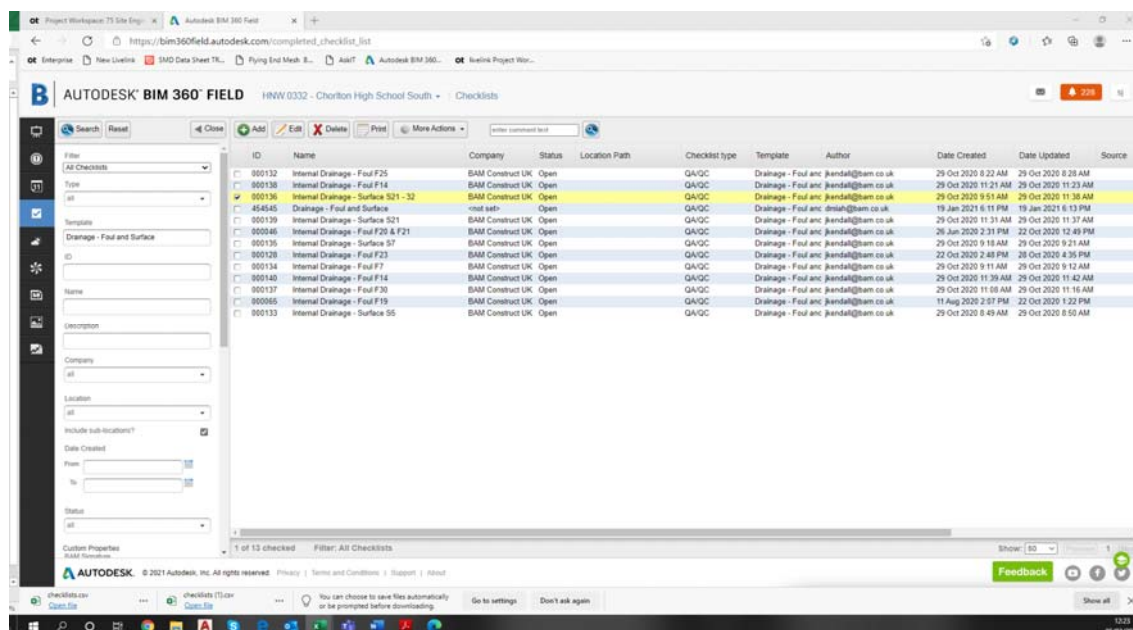
Designation	0/40
Oversize Category	OC30
Maximum Fines	10/5
Resistance to Fragmentation	LA30
Resistance to Freezing and Thawing	MS35
Frost Heave	Non-Frost Susceptible
Permeability	9.4×10^{-12} m/sec

Grading Requirements

Sieve size,mm	% Passing
80	100
40	80 - 100
20	50 - 80
10	20 - 50
4	10 - 30
2	5 - 25
1	5 - 20
0.5	0 - 15
0.063	0 - 5

Give us a call on 0345 1352 425 for more information about our products?
 Green House, Tarnock Way, Rye, CV21 2JF

- QA drainage check sheet & photographic evidence from BIM360 for FW & SW branch pipe, carrier pipe and manhole construction including witnessing air tests of pipelines



HNW.0332 - Chorlton High School South

Checklist Details



Details

ID	000136	Company	BAM Construct UK
Name	Internal Drainage - Surface S21 - 32	Priority	
Description		Status	Open
Author	jkendall@bam.co.uk	Location	<Top level>
Created On	29 Oct 2020 9:51 AM		
Tags			

Checklist Items

Nothing in this document relieves the subcontractor of his contractual responsibilities

Item #	Item Text	Response	# Issues
Keep Water In!			
1	Has building control been notified of commencement?	Yes	0
2	Are the latest drawing revisions being used?	Yes	0
3	Has the actual outfall level been checked before commencement?	Yes	0
HOLD POINT			
4	Have the level falls from the final outfall been checked to each invert for cover and clashes?	Yes	0
5	Are the pipes to the correct specification and diameter?	Yes	0
6	Has the setting out from manhole to manhole allowed for rocker pipes/	Yes	0
7	Is the excavation to the correct depth, width, with correct support system?	Yes	0
8	Are all branches and junctions marked and protected? And recorded on drawings?	Yes	0
HOLD POINT			
9	Is the pipe surround/granular fill to spec' with adequate cover?	Yes	0
10	Have expansion boards been placed at collars for concrete pipe surround?	Yes	0
11	Are the pipes laid to line and level with the correct fall?	Yes	0
12	Has the drainage been tested to spec' prior to pipe surround and records kept?	Yes	0
HOLD POINT			
13	Has the drainage been retested after surround and backfill and recorded?	Yes	0
HOLD POINT			
14	Have all temporary stoppers been placed at manholes etc?	Yes	0

Report run on 05 Mar 2021 12:25 PM by ste.jackson (sjackson@bam.co.uk)

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Report run on 05 Mar 2021 12:25 PM by ste.jackson (sjackson@bam.co.uk)

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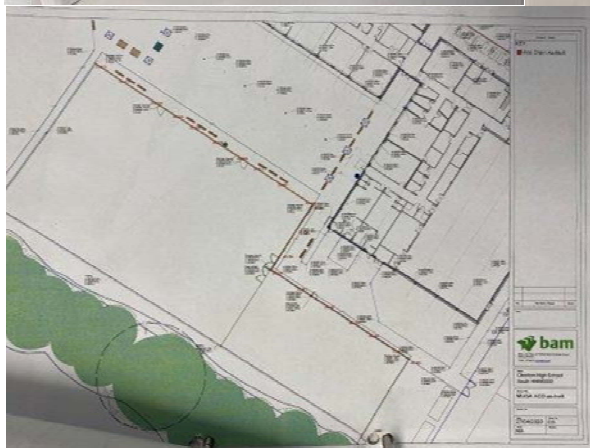
Example of Aco drainage record

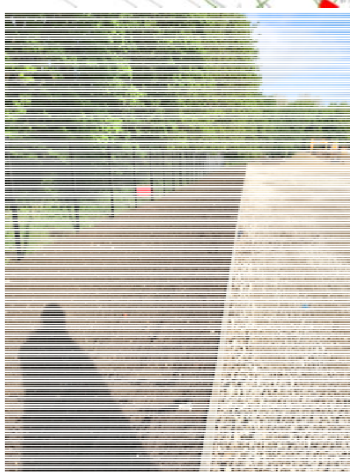
Work Package: Drainage - ~~Foul and Surface~~ ^{Handwritten} Aco Drain		Sheet No:	
Project Title: <u>Choberton High School - Sewer</u>		Contract No: <u>HWS053</u>	
Subcontractor: <u>Kilo</u>	Location: <u>MUGA Pitch Aco Drain</u>		
Work to be inspected by subcontractor	Acceptable? Sign/Date	Comments	Cleared? BAM
Keep Water In!			
Has building control been notified of commencement?	Y		
Are the latest drawing revisions being used?	Y	<u>BDP DRAWING 6A - SHT 260</u> <u>HANCOCK 380</u> <u>CO2</u>	
Has the actual outfall level been checked before commencement?	Y		
HOLD POINT		HOLD POINT	
Have the level falls from the final outfall been checked to each invert for cover and clashes?	Y		
Are the pipes to the correct specification and diameter?	Y		
Has the setting out from manhole to manhole allowed for rocker pipes?	N/A		
Is the excavation to the correct depth, width, with correct support system?	Y		
Are all branches and junctions marked and protected? And recorded on drawings?	Y		
HOLD POINT		HOLD POINT	
Is the pipe surround/granular fill to spec with adequate cover?	N/A		
Have expansion boards been placed at corners for concrete pipe surround?	N/A		
Are the pipes laid to line and level with the correct fall?	Y		
Has the drainage been tested to spec prior to pipe surround and records kept?	N/A		
HOLD POINT		HOLD POINT	
Has the drainage been relasted after surround and backfill and recorded?	N/A		
HOLD POINT		HOLD POINT	
Have all temporary stoppers been placed at manholes etc?	N/A		
Have temporary manhole covers been secured? (Y/N)	N/A		

30457 Inspection & Test Records Inc. Checklist

bam Drainage - Foul and Surface Checklist		Form: 531-0702
Work Package: Drainage - Foul and Surface		Sheet No:
Project Title:		Contract No:
Subcontractor: <u>Kilo Martin Wanser</u>		Date: <u>29/4/20</u>
Signed for Subcontractor: <u>Man Wanser</u>		DRAW: <u>28/04/20</u>
Signed for BAM: <u>Tan Hunt</u>		
Nothing in this document relieves the subcontractor of his contractual responsibilities		
Distribution:		

2 END ACCESS GATES
1 NO OUTLET





Attenuation tank being installed

CQA RECORD

COMPANY Hydro WMS
SUPERVISOR Sam Turnley

TECHNICIANS S.S.

ROLL NO NUMBER	OPERATOR	MACHINE NUMBER	PANEL NUMBER	SEAM NUMBER	DATE	TIME	LENGTH	A/T START TIME BAR	A/T END TIME BAR
0190220123	ST	5036	1-2	1	21-4	9:00	53	9:50 1	9:55 1
1190220043	"	"	2-3	2	"	9:20	53	9:55 1	9:40 1
"	"	"	4-5	3	23-4	9:30	44		
1190220042	"	"	5-6	4	23-4	8:50	123		

START UP TYPE weave OPERATOR ST TIME 8:30 DATE 21-4-2020 MC 5036 TEMP 6.0 SPEED 6
START UP TYPE " OPERATOR " TIME 8:50 DATE 24-4-2020 MC " TEMP " SPEED "
START UP TYPE " OPERATOR " TIME " DATE " MC " TEMP " SPEED "

MEASURE AGREED ✓ SIGNED [Signature] PRINT Sam Turnley ON BEHALF OF Hydro WMS
MEASURE AGREED ✓ SIGNED [Signature] PRINT R HUTCHINS ON BEHALF OF Bram

HydroWMS
Complete Water Management Solutions

Hydro Water Management Solutions Ltd
Rendleigh House 37-41 Longford Lane Warrington
Cheshire WA9 6BN
0181 4003470 www.hydro-wms.co.uk

End of Contract / Mobilisation Sign-off Sheet

Attenuation Tank

This document records that all the installation procedures have been fulfilled and passed by the site manager, and that the site has been left tidy at the end of each mobilisation and at the end of the contract.

I have inspected the installation works and as far as can be seen, they are complete and satisfactory.

On behalf of client: Bram

Site: Manchester

Signed: [Signature] Date: 20-4-20

Print: R HUTCHINS

On behalf of Hydro WMS: 3,300 Sqm liner + textile to muggier Pitch.

Signed: [Signature] Date: 20-4-20

Print: Sam Turnley

Please return a signed copy of this page to Hydro WMS

P1-2-3 = 2190220173
P4-5-6 = 2190220193
P7-8 = 2190220293
P9-10 = 2190220203
P11-12-13 = 2190220223

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
40m	40m	35m	40m	40m	40m	40m	40m	40m	40m	40m	40m	40m
1	1	1	1	1	1	1	1	1	1	1	1	1

+ £960



4. UU adoption documentation for Foul water outfall

United Utilities Inspection Notice

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



Water for the North West

Site details: Details of the site or premise that have been connected to the public sewer	
United Utilities notification reference (ECN/SCWC)	EC5056
Site address	Chorlton High School, Mauldeth Road West, Manchester, M21 7SX
Development type	New property
Contractor Details	
Contractor name / Company Name	Kilo Construction Ltd
Contractor Email Address	kieran.loughrey@kiloconstruction.com
Works Supervisor	Shaun Wilkinson
Confirm sewer 'log on' & 'log off' procedure followed	Yes ☒ No ☐
Principal Contractor Details (if applicable)	
Company name (if applicable)	Bam Construction
Name of Contact for Project	Stephen Jackson
Email Address	sjackson@bam.co.uk
Number of site inspections conducted by United Utilities	2
Connection details	
Sewer connection type	Foul
Foul sewer pipe size diameter	150mm Private
Connecting into:	150mm Existing Sewer Type Combined
Connecting to asset:	a new manhole
Connection Location	the development plot off Mauldeth Road.
Outcome	
Connection status	Satisfactory
Comments	
I can confirm that the Foul Sewer connection is SATISFACTORY - 150mm Private Foul Sewer connecting into the 150mm Combined connected via a new manhole in the development plot off Mauldeth Road.	
Approved: I confirm the sewer connection detailed above has been satisfactorily completed and inspected	
Developer Services Inspector	Andrew Howarth
Date of Inspection	12/02/2021



Water for the North West

United Utilities Water Ltd
Developer Services & Metering
Second Floor, Grasmere House,
Lingley Mere Business Park,
Warrington
WA5 3LP

Telephone: 0345 072 6067
Wastewaterdeveloperservices@uuplc.co.uk

Your Reference	EC5056
Our Reference	4200031264
Date	19 th February 2021

Dear Sir/Madam

Location:	EC5056 Chorlton High School, Mauldeth Road West, Manchester, M21 7SX
-----------	--

I am writing to you in reference to your recent sewer connection application. I can confirm that the connection has been inspected on the 12th February 2021 and is deemed as satisfactory.

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

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

Yours faithfully

Jill Ellis
Developer Services and Metering

5. EA correspondence for surface water outfall

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

BAM Construction Ltd

New surface water outfall connection into culvert

Installation of 250 mm diameter outfall connection into Chorlton Platt Gore Brook culvert

National Grid Reference: SJ 82976 93514

Chorlton High School, Mauldeth Road West, Chorlton

Permit number

EPR/DB3392JD



BAM Construction Ltd.
11 Ducie Street PO Box 85
Picadilly Basin
Manchester
M60 3JA

Our ref: EPR/DB3392JD

Date: 27 February 2020

FAO Lee Jones

Dear Lee

Your new environmental permit

Permit reference: EPR/DB3392JD

Operator: BAM Construction Ltd.

Description of Activity: Construction of new outfall connection into existing manhole

Location : Chorlton High School, Mauldeth Road West, Chorlton

Our determination of your application for a permit is complete. We're satisfied that you can carry out your activities in accordance with the enclosed permit, without increasing flood risk, or harming land drainage or the environment. Please keep the permit in a safe place.

This letter contains web links to other documents. If you aren't able to access these phone me on 02030 250 985 or email sandrine.thomas@environment-agency.gov.uk. Please quote our reference if you contact us.

Please look at the table below and note any of the things that apply to your permit.

If...	then..
you plan to keep your records at a site other than where the activity takes place	you need to let us know within 20 working days of receiving this letter.
your permit includes standard rules	we've enclosed the rules set/s. We may change these in future but will let you know about any changes. You must make sure you're always following the latest rules set.
your permit has a pre-operational condition requiring you to do something before work starts (for example submit a method of work, or have measures in place to reduce sediment mobilisation)	check the deadlines for completing these measures and make sure you carry them out by the times stated.
your permit requires you to notify us before works start	check the deadlines for notifying us and make sure you carry them out by the times stated.
your permit requires you to notify us when any particular work is complete	check the deadlines for notifying us and make sure you carry them out by the times stated.
you need to submit other returns or information	send these to us at the contact details above, unless we advise you otherwise.

This message was sent with High importance.

From: Jackson, Stephen
To: sandrine.thomas@environment-agency.gov.uk
Cc: Bell, Ewan; CHS_South_Mail
Subject: FW: Bespoke flood risk permit EPR/DB3392JD

Sent: Fri 13/11/2020 09:33

Message: Bespoke Permit EPR/DB3392JD.pdf Grant Permit Letter DB3392JD.pdf

Good morning Sandrine,

As per our conversation prior to BAM carrying out the surface water connection you requested confirmation once the works were complete.

I can now confirm the connection works have been complete and the surface water drainage is now discharging into the culvert.

If you require any further information please do not hesitate to contact me by return.

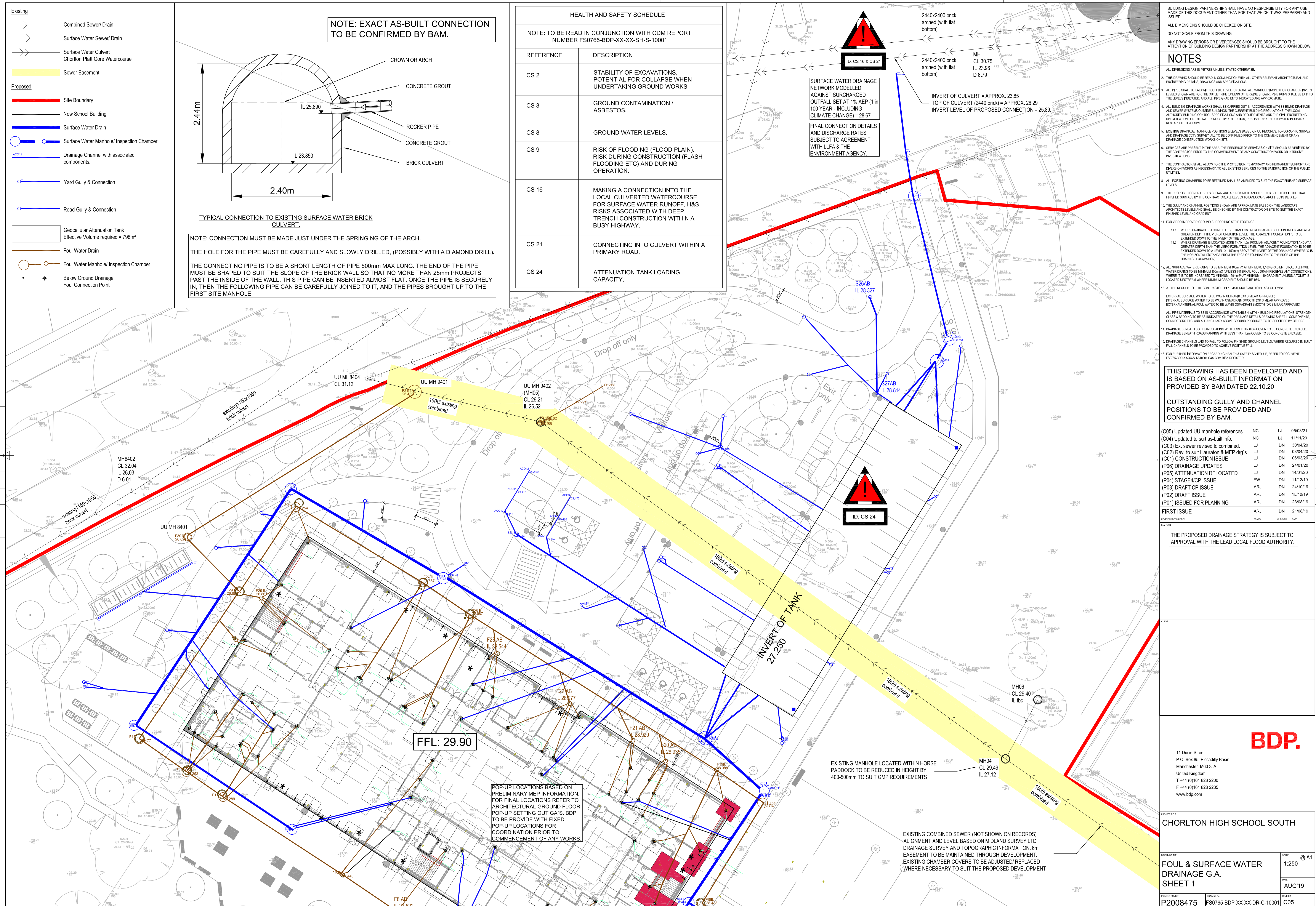
Regards

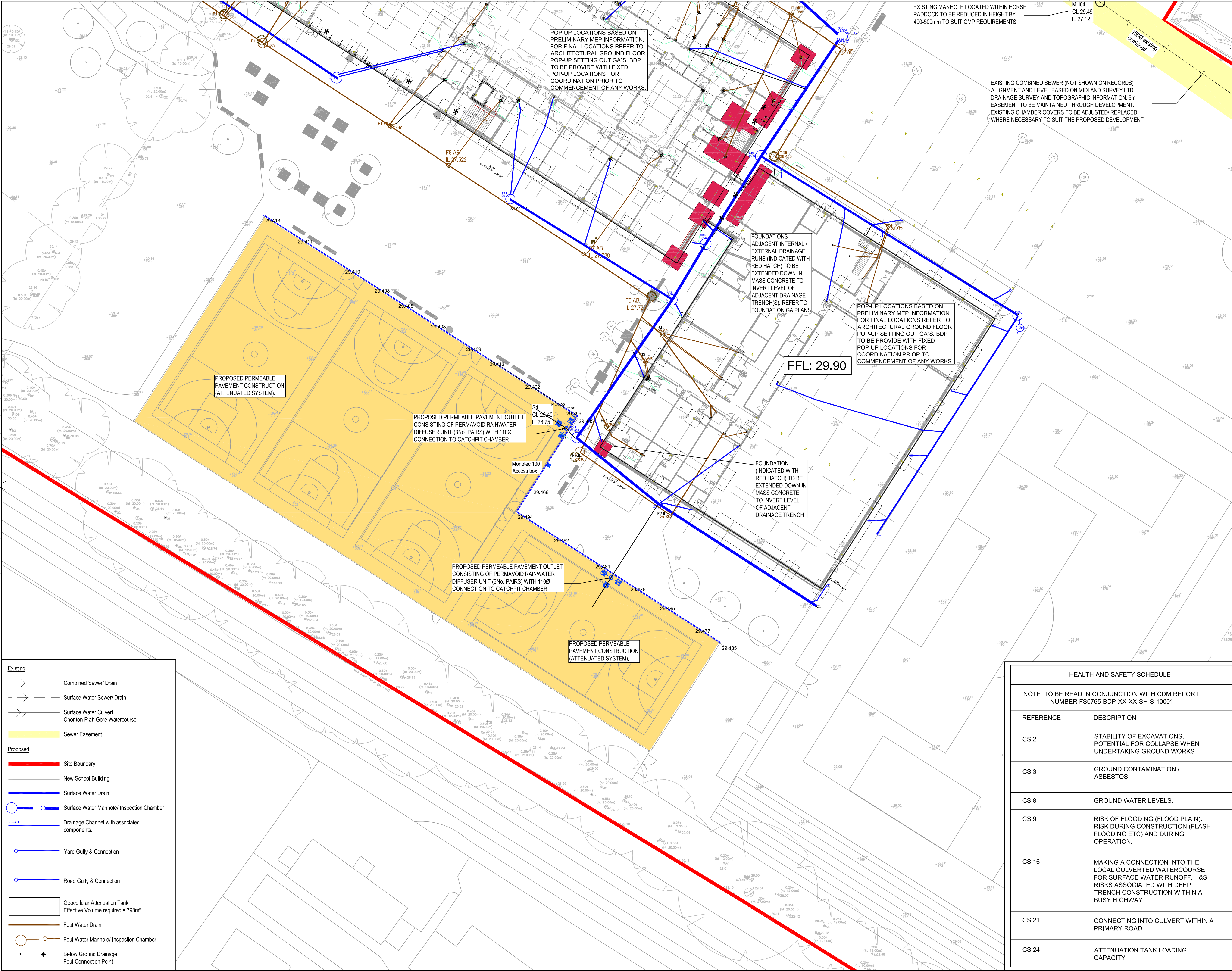
Stephen Jackson | Self Delivery Manager | BAM Construction Ltd- CHS, Mauldeth Road West, Chorlton, M21 7SX.
M 07847879743 | www.bam.co.uk

  
Here's to the future!

6. As built drawing

■





BUILDING DESIGN PARTNERSHIP SHALL HAVE NO RESPONSIBILITY FOR ANY USE MADE OF THIS DOCUMENT OTHER THAN FOR THAT WHICH IT WAS PREPARED AND ISSUED.

ALL DIMENSIONS SHOULD BE CHECKED ON SITE.

DO NOT SCALE FROM THIS DRAWING.

ANY DRAWING ERRORS OR DIVERGENCES SHOULD BE BROUGHT TO THE ATTENTION OF BUILDING DESIGN PARTNERSHIP AT THE ADDRESS SHOWN BELOW.

NOTES

- ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE.
- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
- ALL PIPES SHALL BE Laid WITH SLOPES LEVEL (AND) AND ALL MANHOLE/ INSPECTION CHAMBER INVERT LEVELS SHOWN ARE FOR THE OUTLET PIPE UNLESS OTHERWISE SHOWN. PIPE LINES SHALL BE Laid TO THE LEVELS INDICATED, AND ALL PIPE GRADIENTS INDICATED ARE APPROXIMATE.
- ALL BUILDING DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH BS EN 12251 DRAINAGE AND SEWER SYSTEMS OUTSIDE BUILDINGS, THE CURRENT BUILDING REGULATIONS, THE LOCAL AUTHORITY BUILDING CONTROL, SPECIFICATIONS AND REQUIREMENTS AND THE CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7TH EDITION, PUBLISHED BY THE UK WATER INDUSTRY RESEARCH LTD, 2009.
- EXISTING DRAINAGE, MANHOLE POSITIONS & LEVELS BASED ON LU RECORDS, TOPOGRAPHIC SURVEY AND DRAINAGE CCTV SURVEY. ALL TO BE CONFIRMED PRIOR TO THE COMMENCEMENT OF ANY DRAINAGE CONSTRUCTION WORKS ON SITE.
- SERVICES ARE PRESENT IN THE AREA, THE PRESENCE OF SERVICES ON SITE SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION WORKS ON SITE.
- THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT AND DIVERSION WORKS AS NECESSARY, TO ALL EXISTING SERVICES TO THE SATISFACTION OF THE PUBLIC UTILITIES.
- ALL EXISTING CHAMBERS TO BE RETAINED SHALL BE AMENDED TO SUIT THE EXACT FINISHED SURFACE LEVELS.
- THE PROPOSED COVER LEVELS SHOWN ARE APPROXIMATE AND ARE TO BE SET TO SUIT THE FINAL FINISHED SURFACE BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION WORKS ON SITE.
- THE GULLY AND CHANNEL POSITIONS SHOWN ARE APPROXIMATE BASED ON THE LANDSCAPE ARCHITECTS LEVELS AND SHALL BE CHECKED BY THE CONTRACTOR ON SITE TO SUIT THE EXACT FINISHED LEVEL AND GRADIENT.
- FOR VIBRO IMPROVED GROUND SUPPORTING STRIP FOOTINGS:
 - WHERE DRAINAGE IS LOCATED LESS THAN 1.5m FROM AN ADJACENT FOUNDATION AND AT A GREATER DEPTH THE VIBRO FORMATION LEVEL, THE ADJACENT FOUNDATION IS TO BE EXTENDED DOWN TO THE INVERT OF THE DRAINAGE.
 - WHERE DRAINAGE IS LOCATED MORE THAN 1.5m FROM AN ADJACENT FOUNDATION AND AT A GREATER DEPTH THAN THE VIBRO FORMATION LEVEL, THE ADJACENT FOUNDATION IS TO BE EXTENDED DOWN TO A LEVEL 150mm ABOVE THE INVERT OF THE DRAINAGE WHERE 'X' IS THE HORIZONTAL DISTANCE FROM THE FACE OF FOUNDATION TO THE EDGE OF THE DRAINAGE EXCAVATION.
- ALL SURFACE WATER DRAINS TO BE MINIMUM 100mm @ MINIMUM 1:100 GRADIENT UNO. ALL Foul WATER DRAINS TO BE MINIMUM 150mm UNLESS INTERNAL Foul DRAIN REQUIRES ANY CONNECTIONS, WHERE IT IS TO BE INCREASED TO MINIMUM 150mm @ MINIMUM 1:40 GRADIENT UNLESS A TOILET IS LOCATED UPSTREAM WHERE MINIMUM GRADIENT SHOULD BE 1:80.
- AT THE REQUEST OF THE CONTRACTOR, PIPE MATERIALS ARE TO BE AS FOLLOWS:
 - EXTERNAL SURFACE WATER TO BE WOVEN ULTRABOND (OR SIMILAR APPROVED)
 - INTERNAL SURFACE WATER TO BE WOVEN OSAMODRAIN SMOOTH (OR SIMILAR APPROVED)
 - EXTERNAL/INTERNAL Foul WATER TO BE WOVEN OSAMODRAIN SMOOTH (OR SIMILAR APPROVED)ALL PIPE MATERIALS TO BE IN ACCORDANCE WITH TABLE 4 WITHIN BUILDING REGULATIONS, STRENGTH CLASS 8 BELONGING TO BE AS INDICATED ON THE DRAINAGE DETAILS DRAWING SHEET 1, COMPONENTS, CONNECTORS ETC. AND ALL ANGLY AND ABOVE GROUND PRODUCTS TO BE SPECIFIED BY OTHERS.
- DRAINAGE BENEATH SOFT LANDSCAPING WITH LESS THAN 0.6m COVER TO BE CONCRETE ENCASED, DRAINAGE BENEATH ROADSPARKING WITH LESS THAN 1.2m COVER TO BE CONCRETE ENCASED.
- DRAINAGE CHANNELS Laid TO FALL TO FOLLOW FINISHED GROUND LEVELS, WHERE REQUIRED IN BUILT FALL CHANNELS TO BE PROVIDED TO ACHIEVE POSITIVE FALL.
- FOR FURTHER INFORMATION REGARDING HEALTH & SAFETY SCHEDULE, REFER TO DOCUMENT FSD0765-BDP-XX-XX-DR-C-10002 CAS COMBIB REGISTER.

THIS DRAWING HAS BEEN DEVELOPED AND IS BASED ON AS-BUILT INFORMATION PROVIDED BY BAM DATED 22.10.20

OUTSTANDING GULLY AND CHANNEL POSITIONS TO BE PROVIDED AND CONFIRMED BY BAM.

(C05) Updated UU manhole references,	NC	LJ	05/03/21
(C04) Updated to suit as-built info,	NC	LJ	11/11/20
(C03) Ex. sewer revised to combined,	LJ	DN	30/04/20
(C02) Rev. to suit Hauraton & MEP drg's	LJ	DN	08/04/20
(C01) CONSTRUCTION ISSUE	LJ	DN	06/03/20
(P06) DRAINAGE UPDATES	LJ	DN	24/01/20
(P05) ATTENUATION RELOCATED	LJ	DN	14/01/20
(P04) STAGE4/CP ISSUE	EW	DN	11/12/19
(P03) DRAFT CP ISSUE	ARJ	DN	24/10/19
(P02) DRAFT ISSUE	ARJ	DN	15/10/19
(P01) ISSUED FOR PLANNING	ARJ	DN	23/08/19
FIRST ISSUE	ARJ	DN	21/08/19

REVISION DESCRIPTION	DRAWN	CHECKED	DATE
REV 001			

THE PROPOSED DRAINAGE STRATEGY IS SUBJECT TO APPROVAL WITH THE LEAD LOCAL FLOOD AUTHORITY.

HEALTH AND SAFETY SCHEDULE	
NOTE: TO BE READ IN CONJUNCTION WITH CDM REPORT NUMBER FS0765-BDP-XX-XX-SH-S-10001	
REFERENCE	DESCRIPTION
CS 2	STABILITY OF EXCAVATIONS, POTENTIAL FOR COLLAPSE WHEN UNDERTAKING GROUND WORKS.
CS 3	GROUND CONTAMINATION / ASBESTOS.
CS 8	GROUND WATER LEVELS.
CS 9	RISK OF FLOODING (FLOOD PLAIN), RISK DURING CONSTRUCTION (FLASH FLOODING ETC) AND DURING OPERATION.
CS 16	MAKING A CONNECTION INTO THE LOCAL CULVERTED WATERCOURSE FOR SURFACE WATER RUNOFF, H&S RISKS ASSOCIATED WITH DEEP TRENCH CONSTRUCTION WITHIN A BUSY HIGHWAY.
CS 21	CONNECTING INTO CULVERT WITHIN A PRIMARY ROAD.
CS 24	ATTENUATION TANK LOADING CAPACITY.

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PROJECT TITLE
CHORLTON HIGH SCHOOL SOUTH

DRAWING TITLE FOUL & SURFACE WATER DRAINAGE G.A. SHEET 2	SCALE @ A1 1:250
PROJECT NUMBER P2008475	DATE AUG'19
DRAWING NO. FS0765-BDP-XX-XX-DR-C-10002	REVISION C05



legend

Existing levels
Proposed finished levels
80mm Ø lateral drains
100mm Ø perforated main drain
Silt chambers

drawing details

client: BAM Construction Ltd.	project: Chorton High School South	drawing title: Proposed drainage layout and proposed finished levels Drawing no: FS0765-STRI-XX-ZB-DR-Y-00002-54-C01	drawn by: AK checked by: JW date: 30.09.2019 scale: 1:500 @ A1
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revision history

revision:	details:	DR	CH	AP	date:

drawing status

For Construction

notes

1. Lateral drains laid @ 500mm to invert @ head with 1 in 300 fall
2. Main drain laid @ 850mm to invert

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It is the contractor's responsibility to ascertain the location of all services prior to the commencement of work. Setting out shall be the responsibility of the contractor, any discrepancies shall be reported and clarified at the earliest opportunity.



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