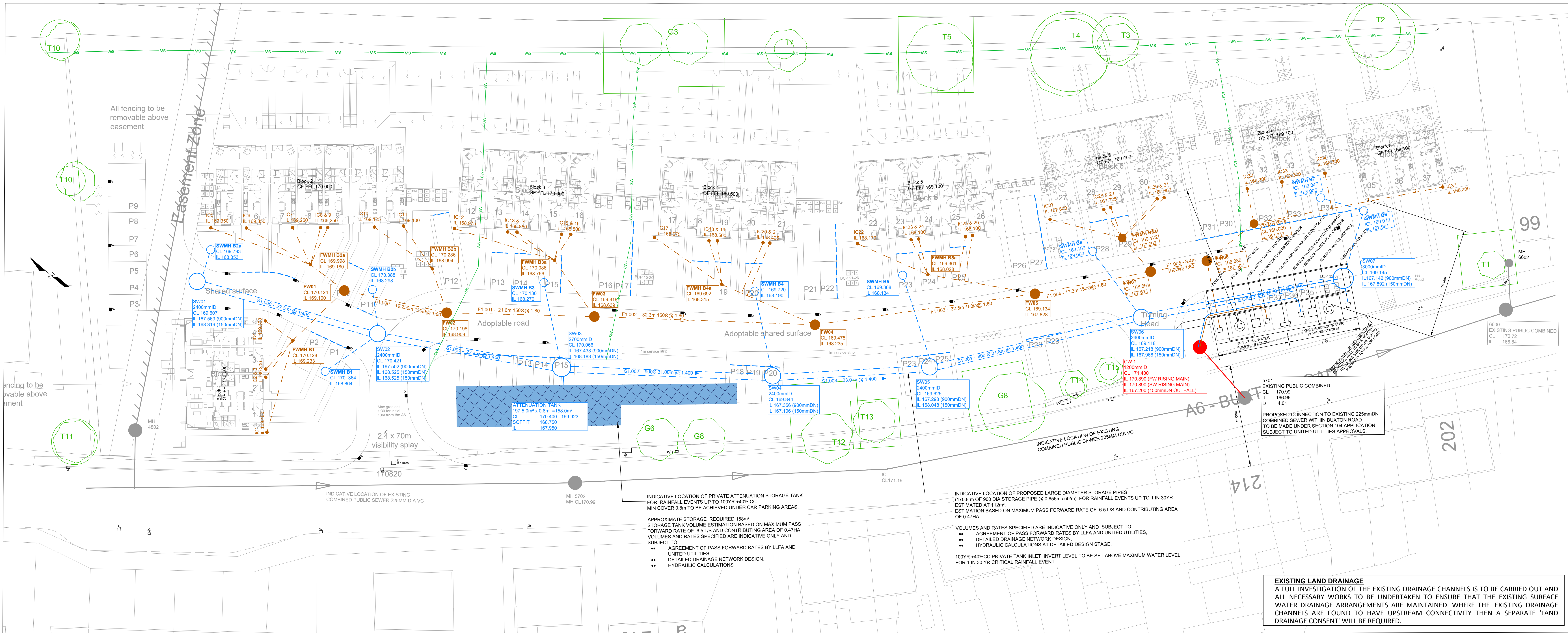




PROPOSED DRAINAGE STRATEGY PLAN
SCALE 1:200

LEGEND	
	EXISTING COMBINED RISING MAIN
	EXISTING COMBINED GRAVITY SEWER
	EXISTING LAND DRAINS (INDICATIVE POSITION)
	PROPOSED SURFACE WATER DRAINAGE ACCESS CHAMBER (S 104)
	PROPOSED SURFACE WATER DRAINAGE (S 104)
	PROPOSED FOUL WATER DRAINAGE ACCESS CHAMBER (S 104)
	PROPOSED FOUL WATER DRAINAGE (S 104)
	PROPOSED COMBINED WATER DRAINAGE ACCESS CHAMBER (S 104)
	PROPOSED COMBINED WATER DRAINAGE (S 104)
	PROPOSED SURFACE WATER ATTENUATION STORAGE
	ROAD GULLY
	CHANNEL DRAIN

OUTFALL CONNECTION NOTE - FOUL

FOUL WATER DRAINAGE TO DISCHARGE TO 225mmDN COMBINED PUBLIC DRAIN WITHIN BUXTON ROAD VIA EXISTING MANHOLE (S701)

- CL = 170.99 - TBC
- IL = 166.98 - TBC

PROPOSED CONNECTIONS IS INTENDED TO BE MADE UNDER SECTION 104 APPLICATION AND SUBJECT TO UNITED UTILITIES APPROVALS.

ALL ABOVE SUBJECT TO CONFIRMATION OF INVERT LEVELS AT DETAILED DESIGN.

OUTFALL CONNECTION NOTE - SURFACE WATER

SURFACE WATER DRAINAGE TO BE DISCHARGED AT CONTROLLED PASS FORWARD RATE OF 6.5/s TO EXISTING 225mmDN COMBINED PUBLIC DRAIN WITHIN BUXTON ROAD VIA EXISTING MANHOLE (S701). SUBJECT TO UNITED UTILITIES APPROVALS.

- OUTFALL CL = 170.99 - TBC
- OUTFALL IL = 166.98 - TBC

PROPOSED CONNECTION IS INTENDED TO BE MADE UNDER SECTION 104 APPLICATION AND SUBJECT TO UNITED UTILITIES APPROVALS.

ALL ABOVE SUBJECT TO CONFIRMATION OF INVERT LEVELS AT DETAILED DESIGN.

DRAINAGE STRATEGY PARAMETERS:

- 1 in 30 YEAR RETURN PERIOD STORAGE (APPROXIMATE 112m³) TO BE PROVIDED WITHIN LARGE CONCRETE CULVERT OR LARGE DIAMETER PIPES UNDER NEW ACCESS ROAD, INTENDED FOR ADOPTION UNDER SECTION 104 AGREEMENT AND SECTION 38 AGREEMENT. ALL SUBJECT TO APPROVALS.
- 1 in 100YR RETURN PERIOD PLUS 40% CLIMATE CHANGE ALLOWANCE STORAGE (APPROXIMATE 158m³) TO BE PROVIDED WITHIN PRIVATE STORAGE SYSTEM (ATTENUATION TANK 95% VOID RATIO) MAINTAINED BY PRIVATE BUILDING MAINTENANCE COMPANY.
- DISCHARGE TO COMBINED PUBLIC SEWER WITHIN BUXTON ROAD AT PROPOSED MAXIMUM PASS FORWARD RATE OF 6.5/s VIA VORTEX FLOW CONTROL (HYDROBRAKE OR SIMILAR APPROVED)
- ALL SUBJECT TO STATUTORY AND UNITED UTILITIES APPROVALS, DETAILED DESIGN AND CALCULATIONS.
- CONTRIBUTING AREA POSITIVELY DRAINED = 4700m² (0.47 ha)
- ATTENUATION STORAGE VOLUMES INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN, CALCULATIONS AND CONSULTATIONS.

GENERAL NOTES:

1. PROPOSED DRAINAGE STRATEGY PLAN SHOWN IS INDICATIVE ONLY AND SUBJECT TO:

- UNITED UTILITIES APPROVALS,
- RELEVANT STATUTORY APPROVALS,
- CCTV CONNECTIVITY AND CONDITIONS SURVEY OF EXISTING PRIVATE AND PUBLIC DRAINAGE NETWORK,
- DETAILED DESIGN AND CALCULATIONS.

- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METERS UNLESS OTHERWISE SPECIFIED. ALL MEASUREMENTS SHOULD BE VERIFIED ON SITE PRIOR TO WORKS BEING UNDERTAKEN
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELATED DRAWINGS AND SPECIFICATIONS.
- THE DRAINAGE CONTRACTOR IS RESPONSIBLE TO MAKING AN APPLICATION TO ANY SEWERAGE UNDERTAKER PRIOR TO CONSTRUCTION OF ANY CONNECTION INTO A PUBLIC MANHOLE.
- THE ENGINEER IS TO BE NOTIFIED OF ANY DISCREPANCIES TO THE DETAILS SHOWN ON THE DRAINAGE PLAN AND ANY UNRECORDED CONNECTIONS NOT SHOWN ON THE DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR CHECKING DIMENSIONS AND LEVELS AND FOR CONFIRMING THE GIVEN LEVEL OF OUTFALL INTO PUBLIC SEWER, WATERCOURSE OR OTHER OUTFALL PRIOR TO CONSTRUCTION WORKS COMMENCING.
- UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT AUTHORITIES ALL DRAWINGS ISSUED ARE AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK.
- TO PROTECT THE DRAINAGE SYSTEM FROM CONSTRUCTION SITE DERBIES, THE CONTRACTOR SHALL ENSURE THAT STOPPERS ARE SECURELY PLACED IN ALL CONNECTIONS IMMEDIATELY UPSTREAM OF THE TANK. ONLY TO BE REMOVED ONCE THE FINAL CLEANING OF THE ROADS/ DRAINAGE HAS BEEN COMPLETED.
- THE DESIGN IS BASED ON THE INFORMATION AVAILABLE ON THE DATE OF ISSUE FROM OTHER PARTIES (E.G. ARCHITECT AND M&E ENGINEER). IT IS SUBJECT TO CHANGE RESULTING FROM UPDATES TO THE AVAILABLE INFORMATION FROM OTHERS.
- NEW DRAINS AND SEWERS TO BE AS FOLLOWS:
 - CONSTRUCTION AND MATERIALS OF PRIVATE SURFACE, FOUL & COMBINED WATER SEWERAGE SYSTEM TO BE IN ACCORDANCE WITH "BUILDING REGULATIONS - APPROVED DOCUMENT H" & "BS EN 752:2017 DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS"
 - CONSTRUCTION AND MATERIALS OF PUBLIC SURFACE, FOUL & COMBINED WATER SEWERS TO BE IN ACCORDANCE WITH "DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C" AND IN ACCORDANCE WITH LOCAL SEWERAGE UNDERTAKER
 - MINIMUM PIPE SIZE FOR ADOPTABLE SURFACE WATER DRAINAGE IS 150mmDN
 - 100mmDN AT MIN 1:100 FOR 10 DWELLINGS OR LESS
 - 150mmDN AT MIN 1:150 FOR GREATER THAN 10 DWELLINGS
 - MINIMUM PIPE SIZE FOR ADOPTABLE FOUL WATER DRAINAGE IS 100mmDN
 - 100mmDN 1:40 WHERE 10 DWELLINGS OR LESS AND NO WC
 - 100mmDN 1:80 WHERE GREATER THAN 10 DWELLINGS AND AT LEAST 1 WC
 - ALL ROAD GULLY PIPEWORK SPURS TO BE 150mmDN UNLESS OTHERWISE SPECIFIED
- LOAD CLASS SELECTION TO COMPLY WITH BS EN 124:
 - LOAD CLASS A15 - AREAS INACCESSIBLE TO MOTOR VEHICLES
 - LOAD CLASS B125 - FOOTWAYS, PEDESTRIAN AREAS ETC
 - LOAD CLASS D250 - GULLY TOPS IN KERBSIDE CHANNELS OF ROADS
 - LOAD CLASS D400 - CARRIAGEWAYS OF ROADS (HEAVY DUTY)
 - LOAD CLASS E600 - AREAS IMPOSING HIGH WHEEL LOADS
 - LOAD CLASS F900 - AREAS IMPOSING PARTICULARLY HIGH WHEEL LOADS

- ALL FOUL DRAINS BENEATH BUILDINGS AND FROM SOIL VENT PIPES, GULLIES AND WC CONNECTIONS BE 100mmDN AT A GRADIENT NOT LESS THAN OF 1:40.
- ALL FOUL CONNECTIONS TO BE FULLY TRAPPED AND EACH FOUL CONNECTION TO A BRANCH DRAIN TO HAVE FULL RODDING ACCESS (E.G. LOW-LEVEL RODDING ACCESS).
- RAINWATER DOWN PIPES ARE TO CONNECT TO A DRAIN VIA A REST BEND.
- WHERE DRAINAGE IS COMBINED A "P" TRAP MUST BE PROVIDED ABOVE PROPOSED FLOOR SLAB LEVEL.
- MINIMUM DEPTH OF COVER TO THE CROWN OF GRAVITY PIPES WITHOUT PROTECTION SHOULD BE AS FOLLOWS (IN ACCORDANCE WITH "DESIGN & CONSTRUCTION GUIDANCE, SEWERAGE SECTOR GUIDANCE APPENDIX C")
 - 350mm - DOMESTIC GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS.
 - 500mm - DOMESTIC DRIVEWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES
 - 900mm - DOMESTIC DRIVEWAYS, PARKING AREAS AND NARROW STREETS WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES
 - 900mm - AGRICULTURAL LAND & PUBLIC OPEN SPACE.
 - 1200mm - HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS TO VEHICLE WITH A GROSS WEIGHT IN EXCESS OF 7.5 TONNES.
- BACKFILL TO DRAINAGE TRENCHES UNDER CARRIAGEWAYS TO BE TYPE 1 SUB-BASE MATERIAL, ELSEWHERE BACKFILL TO BE FREE DRAINING READILY AVAILABLE COMPACTABLE MATERIAL FREE FROM RUBBISH, ORGANIC MATTER, FROZEN SOIL, CLAY LUMPS AND LARGE STONES. TO BE COMPACTED IN LAYERS NOT EXCEEDING 250mm THICK
- A FLEXIBLE JOINT SHALL BE PROVIDED AS CLOSE AS IS FEASIBLE TO THE OUTSIDE FACE OF ANY STRUCTURE INTO WHICH A PIPE IS BUILT, COMPATIBLE WITH THE SATISFACTORY COMPLETION AND SUBSEQUENT MOVEMENTS OF THE JOINT. LENGTH OF THE NEXT PIPE (ROCKER PIPE) IS TO BE IN ACCORDANCE WITH THE TABLE BELOW
 - 150-600mmDN - 600mm LONG ROCKER PIPE
 - 601-750mmDN - 1000mm LONG ROCKER PIPE
 - 751mmDN AND ABOVE - 1250mm LONG ROCKER PIPE
- PIPE CROSSOVERS TO HAVE MINIMUM OF 300mm CLEARANCE BETWEEN OUTSIDE TOP OF THE LOWER PIPE AND OUTSIDE BOTTOM OF THE UPPER PIPE. WHERE THIS CANNOT BE ACHIEVED A SEPARATION, CONCRETE SURROUND IS TO BE FORMED WHICH WILL EXTEND NOT LESS THAN 1000mm EACH SIDE OF THE CROSSING POINT. THE EXTENT OF THE CONCRETE SHOULD BE WITHIN 150mm OF A FLEXIBLE PIPE JOINT. THE CONCRETE SPECIFICATION SHOULD BE IN ACCORDANCE WITH THE STANDARD DETAILS FOR PIPE BED AND SURROUND AS ISSUED BY THE ENGINEER.
- CONCRETE MIXES INDICATED ON THIS DRAWING ARE DESIGNATED MIXES CONFORMING TO BS 8500-1:2006. ALL CONCRETE TO BE SUPPLIED BY CONTRACTOR SHOULD ALLOWANCE FOR CARRYING OUT TESTING ONSITE TO CONFIRM SULPHATE LEVEL CLASSIFICATION.
- ALL PRIVATE MANHOLES AND INSPECTION CHAMBERS TO BE CONSTRUCTED IN ACCORDANCE WITH "BUILDING REGULATIONS - APPROVED DOCUMENT H" & "BS EN 752:2017 DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS".
- ALL MANHOLES AND INSPECTION CHAMBERS TO BE ADOPTED TO BE CONSTRUCTED IN ACCORDANCE WITH "DESIGN AND CONSTRUCTION GUIDANCE FOR FOUL AND SURFACE WATER SEWERS OFFERED FOR ADOPTION UNDER THE CODE FOR ADOPTION AGREEMENTS FOR WATER AND SEWERAGE COMPANIES OPERATING WHOLLY OR MAINLY IN ENGLAND ("THE CODE") AND IN ACCORDANCE WITH UNITED UTILITIES DEVELOPER SERVICES CONSTRUCTION DETAILS.
- CCTV SURVEY OF ALL THE DRAINAGE SHOULD BE CARRIED OUT ON COMPLETION OF THE BUILDING WORKS AND PASSED ON TO THE CLIENT.
- ANY EXISTING DRAINAGE INFRASTRUCTURE TO BE RETAINED TO HAVE NEW COVERS AND FRAMES TO SUIT NEW LEVELS AND SURFACING.

EXISTING LAND DRAINAGE
A FULL INVESTIGATION OF THE EXISTING DRAINAGE CHANNELS IS TO BE CARRIED OUT AND ALL NECESSARY WORKS TO BE UNDERTAKEN TO ENSURE THAT THE EXISTING SURFACE WATER DRAINAGE ARRANGEMENTS ARE MAINTAINED. WHERE THE EXISTING DRAINAGE CHANNELS ARE FOUND TO HAVE UPSTREAM CONNECTIVITY THEN A SEPARATE 'LAND DRAINAGE CONSENT' WILL BE REQUIRED.

T01	NOV 21	ES	PUMPING STATION ADDED AS PER SK 0002 (REV P01)	ES	HL
R07	JULY 21	AP	SURFACE AND FOUL WATER SCHEME REVISED	AP	HL
P06	JAN 21	ES	REVISED TO NEW SITE LAYOUT AND LEVELS	ES	HL
P05	NOV 20	ES	REVISED TO NEW SITE LAYOUT AND LEVELS	ES	HL
P04	OCT 20	ES	LEGEND ADDED, EXISTING LAND DRAINS INDICATED	ES	HL
P03	JUN 20	AP	DRAWING SCALE REVISED	AP	HL
R02	MAY 20	HM	SITE LAYOUT REVISED	AP	HL
REV.	DATE	DRAWN	DESCRIPTION	CHKD	APPRO
STATUS DESCRIPTION				STATUS	

FOR INFORMATION S2



BUXTON ROAD, FURNESS VALE						
DRAWING TITLE						
PROPOSED DRAINAGE STRATEGY PLAN						
CLIENT						
GUINNESS PARTNERSHIP						
HBL REF.		DATE		SCALE(S)		
7396		OCTOBER 2019		1:200		A0
DRAWN		CHECKED		APPROVED		
ES		HL		HL		
DRAWING No.						REV.
7396-HBL-XX-XX-SK-D-1002						T01