

PRIVATE DRAINAGE NOTES:

- DRAINAGE SYSTEMS TO COMPLY WITH THE FOLLOWING STANDARDS:
  - BS EN 752:2008
  - BUILDING REGULATIONS APPROVED DOCUMENT PART H, 2015 EDITION
- ALL COMPONENTS USED IN DRAINAGE SYSTEMS TO COMPLY WITH THE FOLLOWING: BS EN 476:2011
- ALL DRAINAGE SYSTEMS AND COMPONENTS TO BE CONSTRUCTED AND TESTED TO THE FULL SATISFACTION OF THE BUILDING REGULATIONS INSPECTOR
- ALL DRAINAGE TO BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH BS EN 1610:2015.
- EXACT POSITIONS OF SVP'S, STUB-STACKS, W.C. OUTLETS ETC. AND RAINWATER DOWNPIPES ARE TO BE ACCURATELY LOCATED FROM THE ARCHITECT'S DESIGN DRAWINGS.
- PIPES UP TO 225Ø TO BE VITRIFIED CLAY, VITRIFIED CLAY PIPES AND FITTINGS TO COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 295-1:2013, 2:2013, 3:2012 AND BS 65 RESPECTIVELY AND BE KITEMARKED. ALL PIPES SHALL BE EXTRA STRENGTH TO BS 65 OR EQUIVALENT BS EN 295 PIPE CRUSHING STRENGTH.
- ALL PRIVATE BELOW GROUND SW PIPES TO BE PLASTIC TWINWALL DRAINAGE PIPES (MAX 600Ø)
- PRECAST CONCRETE MANHOLES TO BE IN ACCORDANCE WITH BS EN 1917:2002 AND BS 5911-3:2010, 4:2002 AND TO BE KITEMARKED. PRECAST CONCRETE RINGS AND COVER SLABS TO CONCRETE PIPES TO BE JOINTED WITH CEMENT MORTAR UNLESS NOTED OTHERWISE.
- INSITU AND PRECAST CONCRETE UNITS SHALL HAVE SULPHATE RESISTING PORTLAND CEMENT TO BS EN 197-1:2011.
- POLYPROPYLENE INSPECTION CHAMBERS TO COMPLY WITH BS EN 13598-1:2010, 2:2016 AND BS 7158:2001 AND TO BE KITEMARKED.
- MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 124-1 TO 6:2015. MANHOLE COVERS AND FRAMES TO BE OF A NON-ROCKING DESIGN WITH CUSHION INSERTS AND KITEMARKED. LOAD CLASS D400 COVERS TO BE USED IN ALL LOCATIONS. ALL COVERS TO BE BADGED "FW" OR "SW" AS APPROPRIATE. MANHOLE COVER SLABS AND ACCESS TO BE IN ACCORDANCE WITH CONCRETE PIPE ASSOCIATION TECHNICAL BULLETIN ISSUED SEPTEMBER 2001.
- POLYPROPYLENE INSPECTION CHAMBER COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 124-1 TO 6:2015. COVERS AND FRAMES TO BE OF A NON-ROCKING DESIGN WITH CUSHION INSERTS AND KITEMARKED. LOAD CLASS A15 COVERS TO BE USED IN AREAS INACCESSIBLE TO VEHICLES; LOAD CLASS D400 COVERS TO BE USED ELSEWHERE.
- ROAD GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 124-1 TO 6:2015 AND BE OF A NON-ROCKING DESIGN WITH LEFT HANDED CAPTIVE HINGE ACCESS AND BE KITEMARKED. LOAD CLASS D400 GRATES TO BE USED THROUGHOUT WITH 450mm SQ. GRATE AND FRAME. MINIMUM AREA OF WATERWAY TO BE 1010cm².
- YARD GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 124-1 TO 6:2015 AND BE OF A NON-ROCKING DESIGN AND BE KITEMARKED. LOAD CLASS A15 GRATES TO BE USED IN AREAS INACCESSIBLE TO VEHICLES. GRATES TO BE 300mm SQ. MINIMUM AREA OF WATERWAY TO BE 900cm².
- RAINWATER DOWNPIPES CONNECTED DIRECT TO DRAIN TO BE CONNECTED USING AN APPROPRIATE ADAPTOR AND REMOVABLE SECTION OF DOWNPIPE TO PERMIT RODDING ACCESS.
- CLASS Z BEDDING DETAIL SHALL BE PROVIDED:
  - WHERE COVER TO PIPE BARREL IS:
    - i) <1.2m IN VEHICULAR TRAFFICKED AREAS
    - ii) <0.9m IN AREAS INACCESSIBLE TO VEHICLES.
  - AT ALL ROAD GULLY, YARD GULLY, RWP, SVP AND DRAINAGE CHANNEL BRANCHES.
  - AREAS OF DEEP ROOTING VEGETATION
  - PIPE RUNS NEAR BUILDINGS IN ACCORDANCE WITH TYPICAL SECTIONS ON AWP DRAWINGS.
  - WHERE TWO PIPES CROSS WITH A CLEAR GAP OF <300mm. CLASS Z SURROUND TO EXTEND A MINIMUM OF 1.0m FROM THE CENTRE OF THE CROSSING POINT & EXTENDED TO WITHIN 150mm OF THE NEAREST FLEXIBLE JOINT, WHERE REQUIRED.
- CLASS Y BEDDING DETAIL TO BE PROVIDED WHERE COVER TO PIPE CROWN FROM THE UNDERSIDE OF THE SUB STRUCTURE IS LESS THAN 300mm.
- PIPE BEDDING MATERIALS TO COMPLY GENERALLY WITH SHW - SERIES 500 - CLAUSE 503. GRANULAR BEDDING MATERIALS TO ALSO COMPLY WITH BS EN 13242 & THE GRANULAR BEDDING MATERIAL TABLE ON THIS DRAWING.
- SELECTED BACKFILL MATERIAL TO BE PROVIDED ABOVE THE PIPE SURROUND TO A HEIGHT OF 300mm MINIMUM ABOVE THE TOP OF THE PIPE. SELECTED BACKFILL MATERIAL TO BE CLASS 8 - LOWER TRENCH FILL MATERIAL IN ACCORDANCE WITH SHW - SERIES 600 TABLE 6/1 & TO COMPRISE OF UNIFORM SOIL, FREE FROM STONES LARGER THAN 40mm, LUMPS OF CLAY OVER 100mm, TIMBER, FROZEN MATERIAL & VEGETABLE MATTER. SELECTED BACKFILL MATERIAL TO BE PLACED & COMPACTED IN LAYERS NOT EXCEEDING 150mm IN THICKNESS. SHOULD THE MATERIAL BE UNSUITABLE OR WEATHER CONDITIONS AFFECT THE MATERIALS STABILITY, THEN A SUITABLE HARD GRANULAR MATERIAL SHALL BE USED.
- GENERAL BACKFILL TO DRAINAGE TRENCHES [OTHER THAN FILTER DRAINS] IN VEHICULAR TRAFFICKED AREAS ABOVE THE PIPE BEDDING & SELECTED BACKFILL SHALL BE CLASS 1, 2 OR 3 GENERAL FILL MATERIAL IN ACCORDANCE WITH SHW - SERIES 600.
- GENERAL BACKFILL UNDER NON-VEHICULAR TRAFFICKED AREAS TO BE SUITABLE AS-DUG MATERIAL COMPACTED IN ACCORDANCE WITH SHW - SERIES 600 IN LAYERS NOT EXCEEDING 225mm. EACH LAYER COMPACTED TO FORM A STABLE TRENCH BACKFILL. SHOULD THE MATERIAL BE UNSUITABLE OR WEATHER CONDITIONS AFFECT THE MATERIALS STABILITY, THEN A HARD GRANULAR MATERIAL SHALL BE USED UP TO FORMATION LEVEL.
- ALL CONCRETE TO BE DESIGNATED CONCRETE TO CONFORM TO BS 8500-2.
- NO MECHANICAL COMPACTION OF FILL MATERIAL WITHIN 300mm OF THE CROWN OF ANY PIPE.

PROPOSED HYDRO-BRAKE FLOW CONTROL.  
(BASED ON THE 30% BETTERMENT OF THE CURRENT DISCHARGE RATE)  
DESIGN HEAD: 2.000 m  
DESIGN DISCHARGE: 30 l/s  
MD-SHE-0223-3000-2000-3000  
CL: 70.500m  
IL: 68.179m

PROPOSED CONNECTION TO EXISTING MANHOLE  
CL TBC  
IL TBC

PROPOSED ATTENUATION TANK AREA TO STORE 94.8m³.  
DRAWN 11mX7.5X1.2 m DEPTH WITH 95% VOIDS

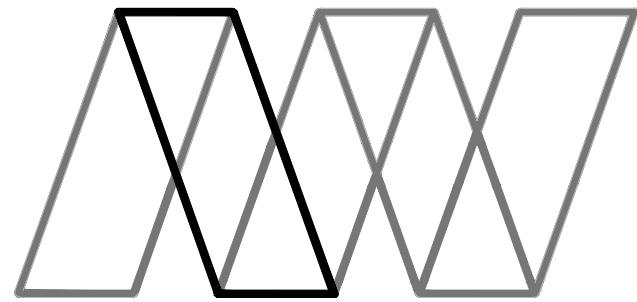
PROPOSED FULL RETENTION SEPARATOR - TO BE KLARGESTER NSFA080 OR EQUIVALENT APPROVED

NOTES:

- G01. THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS, WHERE CONFLICT OF REQUIREMENTS EXIST THE ORDER OF PRECEDENCE SHALL BE AS SHOWN IN THE SPECIFICATION. OTHERWISE THE STRICTEST PROVISION SHALL GOVERN.
- G02. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS.
- G03. DRAWINGS NOT TO BE SCALED. ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.
- G04. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE AND ENSURE THAT THE BUILDING AND ITS COMPONENTS ARE SAFE DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACINGS OR TIE-BEAMS WHICH MAY BE NECESSARY. SUCH MATERIAL REMAINING THE PROPERTY OF THE CONTRACTOR ON COMPLETION, AND FOR ENSURING THAT THE WORKS AND ANY ADJACENT PROPERTIES ARE SAFE IN THE TEMPORARY CONDITION.
- ROADWORKS NOTES**
- R01. LEVELS AT THE IN EXISTING ROAD CONSTRUCTION TO BE CONFIRMED. ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER.
- R02. ALL WORKS ADJACENT OR WITHIN PUBLICLY ADOPTED ROADS TO BE IN ACCORDANCE WITH LOCAL HIGHWAY AUTHORITY REQUIREMENTS.
- R03. IF ANY DISCREPANCIES EXIST BETWEEN THE SPECIFICATION AND THE DRAWINGS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
- R04. WHERE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE AUTHORITY PRIOR TO COMMENCEMENT OF EACH STAGE OF THE WORK FOR THEIR REPRESENTATIVE TO CARRY OUT INSPECTION TO ENSURE COMPLIANCE WITH THEIR SPECIFICATION AND APPROVED DETAILS. IF ANY SUCH REQUESTS OR INSTRUCTIONS CAUSE CONFLICT WITH THE SPECIFICATION THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
- R05. ALL BLOCKS TO BE CUT USING A STONE CUTTER NOT A BLOCK SPLITTER
- R06. TYPES OF KERBING TO SUIT EACH SURFACE TYPE AND PROPOSED USE.
- R07. CONCRETE AREAS TO BE:
- SUITABLE TO WITHSTAND TRAFFIC LOADING AND GROUND CONDITIONS
  - JOINTS TO BE PROVIDED AS REQUIRED
  - POSITIVELY DRAINED
- R08. ROADS TO BE:
- SUITABLE TO WITHSTAND TRAFFIC LOADING AND GROUND CONDITIONS
  - JOINTS TO BE PROVIDED AS REQUIRED
  - POSITIVELY DRAINED
- EXISTING SERVICES NOTES**
- E01. CONTRACTOR TO PROTECT EXISTING SERVICES WITHIN THE SITE OR OVERLY AS REQUIRED.
- E02. EXISTING PRESSURE PIPELINES TO BE PROTECTED DURING THE WORKS.
- E03. EXISTING SEWERS AND OTHER SERVICES IN THE VICINITY OF THE PROPOSED WORKS TO BE SURVEYED AND DETAILS PROVIDED AND PROTECTED AS NECESSARY FROM PROPOSED WORKS.
- E04. EXISTING INFRASTRUCTURE THAT IS TO BE ABANDONED SHALL BE FILLED WITH SUITABLE MATERIAL CAPABLE OF WITHSTANDING THE PROPOSED FUTURE LOADS. GEOTECHNICAL, CIVIL AND STRUCTURAL ENGINEER TO APPROVE.

LEGEND	
	DEVELOPMENT BOUNDARY
	INDICATIVE RETAINING WALL
	RODDING EYE
	SURFACE WATER CHAMBER
	SURFACE WATER SEWER
	PERFORATED PIPE
	SIPHONIC DRAIN-TO BE DESIGNED BY OTHER
	PROPOSED ATTENUATION TANK
	PROPOSED POND
	PROPOSED PERMEABLE AREA
	PROPOSED ACCO DRAIN CHANNEL
	PROPOSED HEADWALL
	PROPOSED OIL SEPARATOR
	PROPOSED RAIN WATER PIPE
	PROPOSED EXCEEDANCE FLOW PATH ROUT
	PROPOSED GULLY

P2	UPDATED TO THE LEVELS	22.09.23	MM	KH	KH
P1	FIRST ISSUE	07.09.23	MM	KH	KH
Rev	Description	Date	By	Chk	App.



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Project:	BIRTHWAITE BUSINESS PARK				
Client:	PREMDOR CROSBY LTD				
Drawing:	PROPOSED DRAINAGE STRATEGY-UNIT B-PARKING AREA				
Role:	CIVIL ENGINEER				
Drawing Status:	FOR INFOMATION			Suitability Code:	-
Job no.	49145	Scale@ A1:	1:200	Rev.	P2
Project Originator Volume Level Type Role Number BBP - AWP - XX - XX - DR - C - 3002					