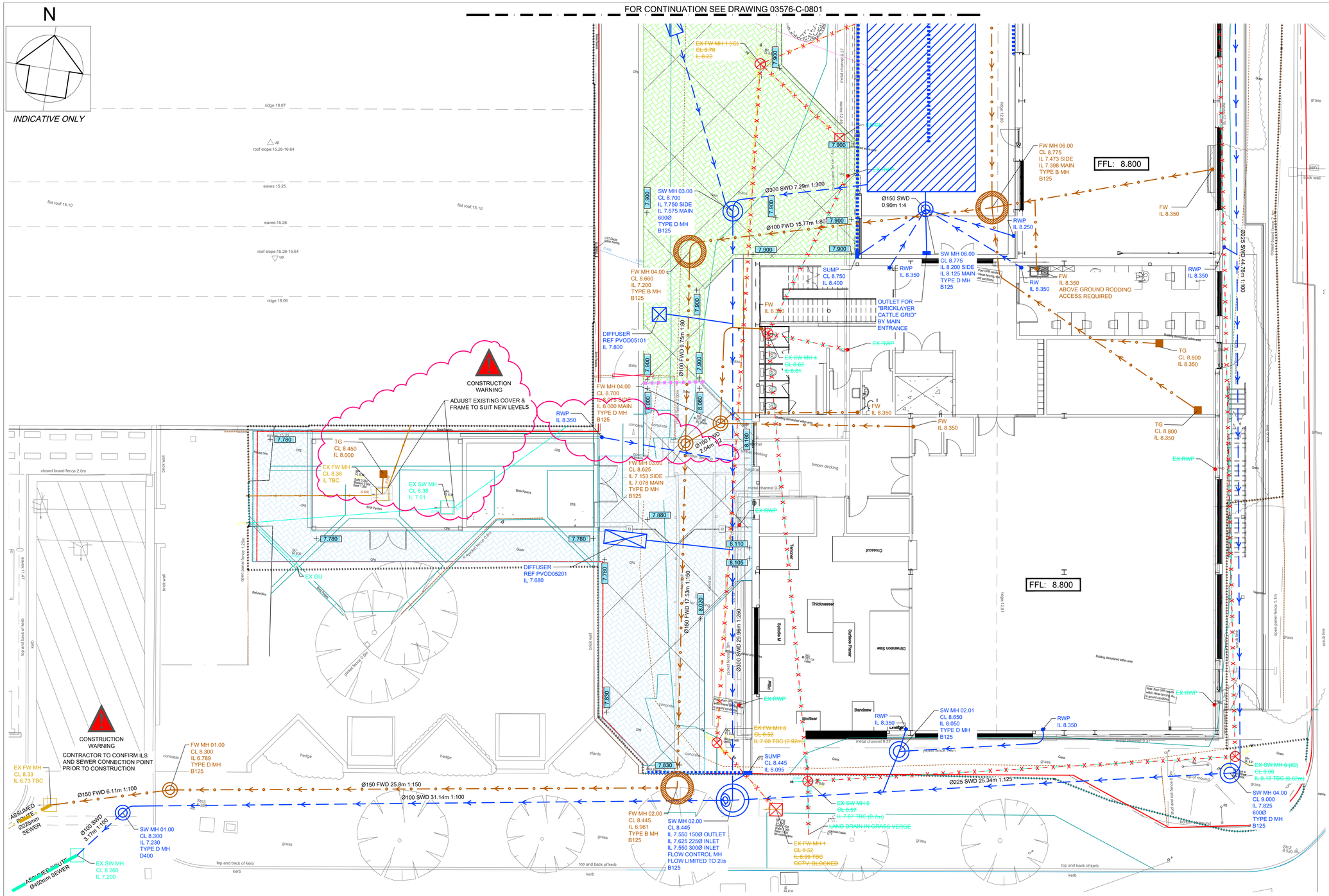


DRAINAGE LEGEND

EXISTING FEATURES

- EXISTING SURFACE WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING SURFACE WATER DRAIN AND MANHOLE TO BE RETAINED
- EXISTING FOUL WATER SEWER AND MANHOLE TO BE RETAINED
- EXISTING FOUL WATER DRAIN AND MANHOLE TO BE RETAINED
- EXISTING FOUL/SURFACE/COMBINED WATER DRAIN AND MANHOLE TO BE ABANDONED. CONTRACTOR TO CONFIRM THAT NO LIVE CONNECTIONS REMAIN. PIPES TO BE FULLY REMOVED.
- EXISTING UNKNOWN DRAIN/UTILITY AND MANHOLE WHICH REQUIRES FURTHER INVESTIGATION

PROPOSED FEATURES

- SURFACE WATER DRAIN
- RWP ● RAINWATER PIPE - REFER TO PUBLIC HEALTH ENGINEERS/ARCHITECTS DRAWINGS FOR DETAILS
- SUMP / DRAINAGE CHANNEL — CHANNEL DRAIN SYSTEM WITH SUMP UNIT
- STORM WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm OR 600mm
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER TO SOFFIT OF PIPE IS LESS THAN 1m
  (MAX PIPE DIAMETER 150mm 450Ø/475Ø)
  (MAX PIPE DIAMETER 225mm 600Ø)
- STORM WATER FLOW CONTROL MANHOLE
- SEL ENVIRONMENTAL LTD
  DIFFUSER UNIT WITHIN SUB-BASE
- PERMEABLE PAVING
  PERMEABLE SURFACE WITH STORAGE SUB-BASE
  MINIMUM 500mm SUB-BASE
- PERMEABLE PAVING
  PERMEABLE SURFACE WITH SIGNIFICANT SLOPE
  MINIMUM 400mm SUB-BASE
- CONCRETE BAFFLE WITHIN SUB-BASE
  TBC BY BLOCK SUPPLIER
- VENT PIPE — STORM WATER SOAKAWAY / ATTENUATION TANK
  GL = GROUND LEVEL
  TOTL = TOP OF TANK LEVEL
  BOTL = BOTTOM OF TANK LEVEL
- Ø100 SWD 3.48m 1:100 — PIPE DETAIL: Ø, LENGTH, GRADIENT,
- SW MH 01.00 / CL 00.00 / IL 00.00 / SIL 00.00 / TYPE C MH / CATCHPIT / D400 — MANHOLE REFERENCE: COVER LEVEL, INVERT LEVEL, SUMP INVERT LEVEL, MH TYPE, CATCHPIT MANHOLE (IF REQUIRED), COVER GRADE
- FOUL WATER DRAIN
- FOUL WATER RISING MAIN
- FW ● ABOVE GROUND FOUL WATER CONNECTION - REFER TO PUBLIC HEALTH ENGINEERS/ARCHITECTS DRAWINGS FOR DETAILS
- FOUL WATER MANHOLE TYPE D
  INTERNAL DIMENSIONS 450mm MINIMUM
  DEPTH FROM COVER TO SOFFIT OF PIPE UP TO 3m
  RESTRICT ACCESS TO Ø350 IF DEPTH FROM COVER SOFFIT OF PIPE IS LESS THAN 1m
  (MAX PIPE DIAMETER 150mm)
- FOUL WATER MANHOLE TYPE B
  FOR INTERNAL DIAMETER REFER TO PLAN
  DEPTH FROM COVER TO SOFFIT OF PIPE 1.5m - 3m
- Ø100 FWD 3.48m 1:80 — PIPE DETAIL: Ø, LENGTH, GRADIENT,
- FW MH 01.00 / CL 00.00 / IL 00.00 / TYPE C MH / D400 — MANHOLE REFERENCE: COVER LEVEL, INVERT LEVEL, MH TYPE, COVER GRADE
- FFL: XX.XXX — ARCHITECTURAL FINISHED FLOOR LEVEL

REV	DATE	BY	DESCRIPTION
C04	28/10/24	JLM	UPDATED WHERE CLOUDED
C03	14/10/24	SPB	UPDATED TO SUIT EXISTING INVERT LEVEL
C02	30/09/24	SPB	UPDATED TO SUIT COMMENTS
C01	10/09/24	JTE	UPDATED TO SUIT COMMENTS
P02	30/08/2024	BLB	UPDATED TO SUIT COMMENTS

DRAWING STATUS
CONSTRUCTION

marbas

CLIENT
AMIRI CONSTRUCTION

PROJECT
WEST DURRINGTON CAMPUS
NEW TEACHING BLOCK

DRAWING TITLE
PROPOSED BELOW GROUND
DRAINGE LAYOUT
SHEET 1 OF 2

DRAWING No.: 03576-C-0800
REV.: C04

SCALE	DATE	DRAWN	CHECKED	SHT.
1:100	02/07/2024	BB	BS	A1

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NOTES:

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
2. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.
3. ALL PIPES TO BE ADOPTED, OR CONNECTING TO ADOPTED SEWERS, AND/OR SITUATED UNDER HIGHWAY TO BE VITRIFIED CLAY TO BS EN 295 & BS65 (SWS ONLY), OR CONCRETE PIPES TO BE EN 1916 & BS5911:PART 1, OR THERMOPLASTIC STRUCTURED WALL SEWER PIPES TO WIS 4-35-01 (CLASS 8KN/SQM) AND BE CAPABLE OF WITHSTANDING 4000 PSI JETTING PRESSURE. PRIVATE PIPES MAY BE VC OR PLASTIC.
4. ADOPTABLE HIGHWAY WORKS ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY DESIGN GUIDANCE.
5. ANY WORKS ASSOCIATED WITH THE HIGHWAY/EXTERNAL WORKS INCLUDING HIGHWAY DRAINAGE, SHALL BE IN ACCORDANCE WITH THE HIGHWAYS AGENCY 'MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOL 1' (MCHW), UNLESS OTHERWISE SPECIFIED.
6. FOR CONSTRUCTION DETAILS REFER TO THE RELEVANT MARBAS DRAWING NUMBERS LISTED ON THE DRAWING ISSUE SHEET.
7. ALL ADOPTABLE DRAINAGE WORKS TO BE CONSTRUCTED AS DETAILED IN "THE CODE" FOR ADOPTION DESIGN AND CONSTRUCTION GUIDANCE AND THE LOCAL WATER AUTHORITY'S LOCAL PRACTICE NOTE.

DRAINAGE NOTES

8. ALL ADOPTABLE SEWERS WITH LESS THAN 1.20m OF COVER WHEN LAID BENEATH THE ROADS, OR 0.90m OF COVER IN OTHER AREAS, SHALL HAVE CONCRETE PROTECTION IN ACCORDANCE WITH EITHER OF THE DETAILS SHOWN ON THE STANDARD DRAWING PROVIDED.
9. ALL DRAINAGE WORKS SHOULD COMMENCE AT THE PROPOSED DOWNSTREAM CONNECTION POINT, THE WORKS CONTINUING UPSTREAM FOLLOWING CONFIRMATION OF THE TIE-IN INVERT LEVELS TO THE ENGINEER. CONNECTIONS TO MANHOLES OR LARGER SIZED PIPES ETC. SHOULD BE SOFFIT TO SOFFIT UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, IF THIS IS NOT POSSIBLE INFORM THE ENGINEER IMMEDIATELY
10. COVER LEVELS SHOWN ARE APPROXIMATE. COVERS AND FRAMES SHALL BE SET TO FINISHED GROUND LEVELS AND FALLS.
11. ROAD GULLY PIPES ARE TO BE 150mm DIA. WITH CONCRETE SURROUND AND FLEXIBLE JOINTS, ALL OTHER UN-REFERENCED PIPES ARE ASSUMED TO BE 100mm DIA.
    - FW MIN GRADIENT - 1 IN 40 (100 DIA) NO WC'S CONNECTED
    - FW MIN GRADIENT - 1 IN 80 (100 DIA) MIN 1 WC CONNECTED
    - FW MIN GRADIENT - 1 IN 150 (150 DIA) MIN 5 WC'S CONNECTED
    - SW MIN GRADIENT - 1 IN 100 (100 DIA)
    - SW MIN GRADIENT - 1 IN 150 (150 DIA)
12. ALL GULLIES SHALL BE FITTED WITH GRADE D400 GRATINGS AND FRAMES TO BS EN124, UNLESS OTHERWISE STATED.
13. IN ORDER TO MAINTAIN THE SATISFACTORY FUNCTIONING OF SURFACE WATER SEWERS, ALL ROAD AND YARD GULLIES ARE TO BE "TRAPPED".
14. ALL NON ADOPTABLE LATERALS BENEATH THE HIGHWAY SHALL BE BACK FILLED WITH A TYPE 1 GRANULAR MATERIAL AS CL 803 (MCHW) APPROVED BY THE ENGINEER.
15. ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT PART-H, AND TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
16. WHERE DRAINS PASS THROUGH FOUNDATIONS OR CONNECT TO MANHOLES, A FLEXIBLE PIPE JOINT SHOULD BE PROVIDED TO FORM A ROCKER PIPE IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED.
17. SHALLOW PRIVATE DRAINS MAY REQUIRE PROTECTION USING CLASS 'Z' CONCRETE SURROUND OR PAVING SLABS BRIDGING THE TRENCH SUBJECT TO THE NHBC INSPECTOR'S REQUIREMENTS.
18. WHERE DRAINAGE RUNS PASS CLOSE TO BUILDINGS OR THEIR INVERT LEVELS ARE BELOW FOUNDATION LEVEL, THEN THE TRENCHES ARE TO BE BACK FILLED IN ACCORDANCE WITH THE STANDARD DETAIL PROVIDED.
19. REFERENCE SHOULD BE MADE TO THE STRUCTURAL ENGINEERS DETAILS FOR ALL ASPECTS OF FOUNDATION DESIGN AND CONSTRUCTION.
20. THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.

THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE. NO DIMENSIONS ARE TO BE SCALED FROM THESE DRAWINGS.

22. IT IS THE CONTRACTORS/SUBCONTRACTORS RESPONSIBILITY TO ENSURE COMPLIANCE WITH THE CURRENT BUILDING REGULATIONS AND CODES OF PRACTICE.
23. STUB CONNECTIONS TO ADOPTABLE MANHOLES SHALL BE MADE FROM VITRIFIED CLAY AND CONSIST OF TWO ROCKER PIPES LAID AT THE SAME GRADIENT AS THE UP OR DOWNSTREAM PIPE.
24. ALL DOWNPIPES ARE TO BE SEALED, IE CONNECTED DIRECTLY TO THE STORMWATER DRAIN. ACCESS POINTS TO BE PROVIDED 1m ABOVE GROUND LEVEL FOR EXTERNAL RWP'S AND 1m ABOVE FFL FOR INTERNAL RWP'S.
25. UNLESS OTHERWISE NOTED OR SIMILAR APPROVED CHANNEL DRAINS TO BE ACO MULTI DRAIN WITH A15 GRATING IN PEDESTRIAN AREAS, C250 IN CAR PARKS AND D400 IN CARRIAGEWAYS. SLOTTED CHANNEL TO BE USED FOR AREAS WITH FALLS <1:15 MESH GRATING TO BE USED WERE FALLS >1:15.
26. GULLY AND CHANNEL DRAIN POSITIONS ARE LIABLE TO AMENDMENT WHEN THE DESIGN LEVELS HAVE BEEN DETERMINED.
27. MODULAR GEOCELLULAR STORAGE/SOAKAWAY SYSTEM TO CONFORM TO CIRIA C793 THE SUDS MANUAL, C680 STRUCTURAL DESIGN OF MODULAR GEOCELLULAR DRAINAGE TANKS & C698 SITE HANDBOOK FOR THE CONSTRUCTION OF SUDS. THE MANUFACTURER SHOULD PROVIDE A COMPLETE SET OF INDEPENDENT TEST RESULTS FOR A PROPOSED SYSTEM INCLUDING, AS A MINIMUM, STRESS/STRAIN CURVES FOR VERTICAL AND LATERAL COMPRESSION, AND CREEP TESTS UNDER SUSTAINED LONG-TERM LOADS. A BBA CERTIFICATE IS NOT INDEPENDENT TEST DATA.
28. ALL REDUNDANT DRAINAGE TO BE ABANDONED ONCE THE CONTRACTOR HAS SATISFIED HIMSELF THAT NO CONNECTIONS REMAIN LIVE. REDUNDANT DRAINAGE TO BE GRUBBED OUT.
29. ALL BELOW GROUND CONCRETE TO ACCORD WITH BS5328:1997;SULPHATE CLASS TBA.
30. IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. GENERALLY SUB SOIL DRAINS AFFECTED ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER DRAINAGE SYSTEM. PIPE DIAMETERS AND GRADIENTS ARE TO BE MAINTAINED.
31. BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR MUST CHECK THE INVERT LEVELS OF EXISTING SEWERS TO WHICH CONNECTIONS ARE MADE. IN ADDITION THE CONTRACTOR MUST LOCATE AND DETERMINE INVERT LEVELS OF THE EXISTING SPURS TO WHICH CONNECTIONS ARE PROPOSED. ADDITIONAL SPUR/MANHOLE CONNECTIONS ARE TO BE AGREED WITH THE RELEVANT ADOPTING AUTHORITY. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER IMMEDIATELY, PRIOR TO CONSTRUCTION.
32. ROAD REINSTATEMENTS ARE TO BE TO THE HIGHWAY AUTHORITY APPROVAL.
33. NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.

CONSTRUCTION WARNING

IMPORTANT NOTE: CAUTION

ALL INFORMATION SHOWN ON THIS DRAWING FOR UNDERGROUND SERVICES/STATUTORY UNDERTAKERS' PLANT IS APPROXIMATE AND IS *PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY*. IT SHOULD NOT BE RELIED ON FOR EXCAVATION OR ANY OTHER WORKS PURPOSES AND CONTRACTORS MUST SATISFY THEMSELVES OF THEIR LOCATIONS PRIOR TO THE COMMENCEMENT OF WORKS.