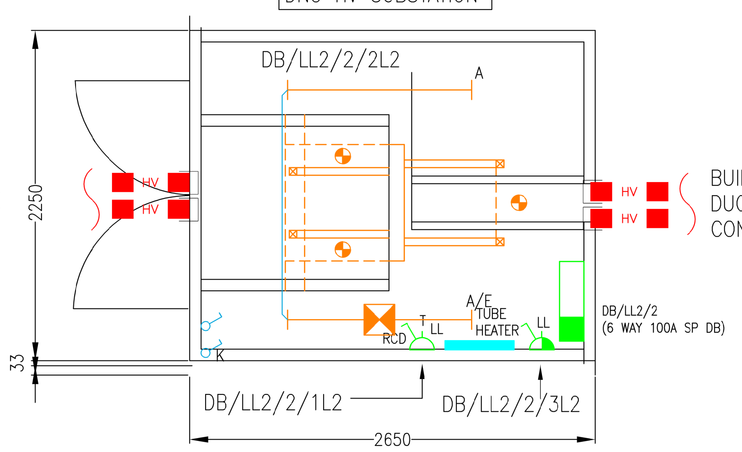
PROJECT I ORIGINATOR I ZONE I LEVEL I TYPE I ROLE I CLASS I NUMBER	REVISION
P1948-NOV-XX-XX-DR-E-9602	P01
LINKED FILES	

0 200 400 600 800 1m 120 140 160 180 2m

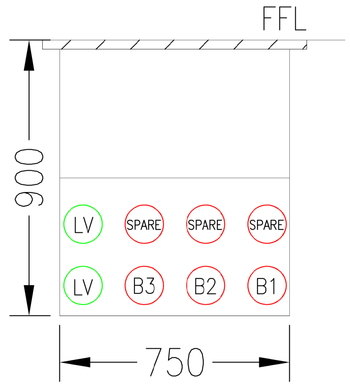
1:20 SCALE

DNO HV SUBSTATION

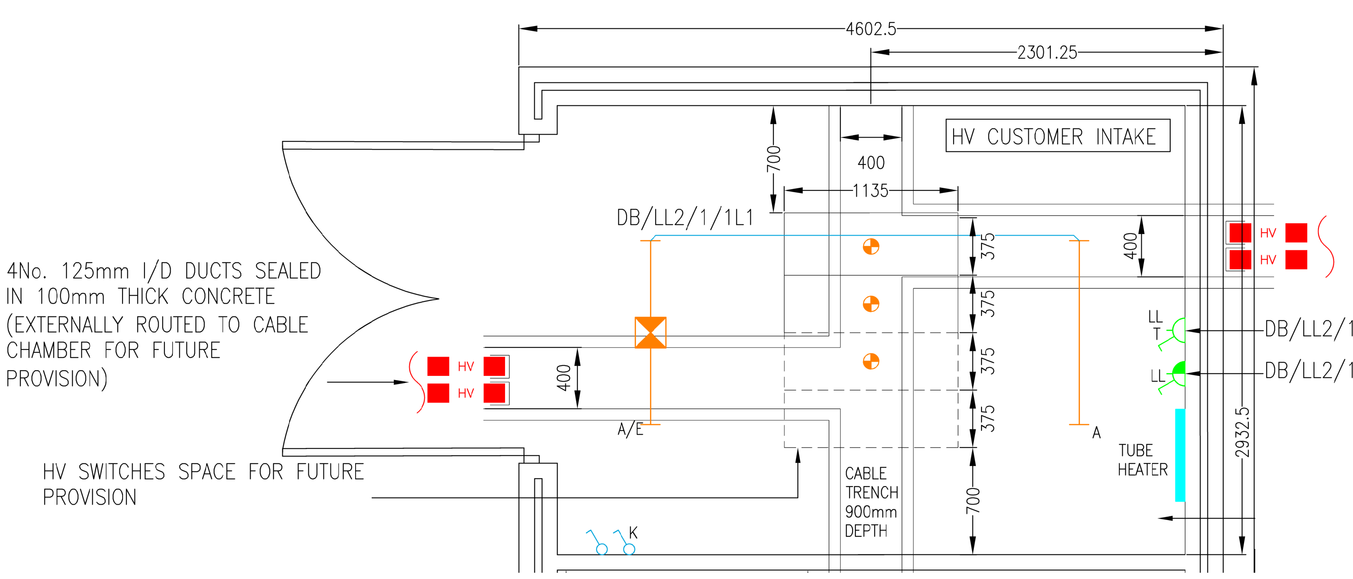


BUILD IN 4 No. 125mm I/D DUCTS SEALED IN 100mm THICK CONCRETE

BUILD IN 4 No. 125mm I/D DUCTS SEALED IN 100mm THICK CONCRETE



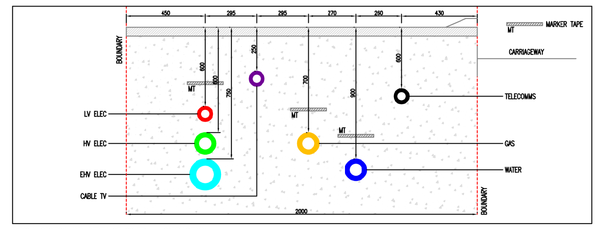
TRENCH ELEVATION – ELECTRICAL LAYOUT
SCALE 1:10



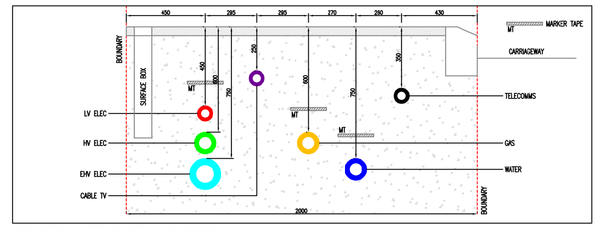
4No. 125mm I/D DUCTS SEALED IN 100mm THICK CONCRETE (EXTERNALLY ROUTED TO CABLE CHAMBER FOR FUTURE PROVISION)

HV SWITCHES SPACE FOR FUTURE PROVISION

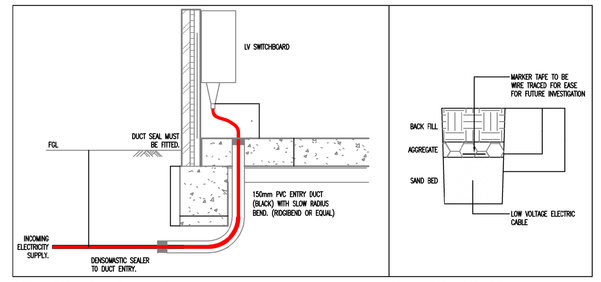
BUILD IN 4 No. 125mm I/D DUCTS SEALED IN 100mm THICK CONCRETE



TYPICAL SECTION AND DEPTH OF COVER – CARRIAGEWAY



TYPICAL SECTION AND DEPTH OF COVER – NON CARRIAGEWAY



TYPICAL ELECTRICAL DUCT ENTRY DETAIL N.T.S

TYPICAL ELECTRICAL TRENCHING DETAIL

PROPOSED EXTERNAL SERVICES	
SYMBOL	REFERENCE
LV	PROPOSED LV DUCT (LIGHTING & EVC)
LV	PROPOSED MAINS LV DUCT
HV	PROPOSED HV DUCT
BT BT	PROPOSED BT DUCT
COMMS	PROPOSED COMMS DUCT
I/D	INTERNAL DIAMETER OF DUCT

ELECTRICAL SERVICES LEGEND	
SYMBOL	REFERENCE
	LIGHT SWITCH
	KEY OPERATED SWITCH
	TWIN SWITCHED SOCKET OUTLET
	SWITCHED FUSED CONNECTION UNIT
	BSEN60309 IP RATED SWITCHED SOCKET OUTLET (xA DENOTES RATING) (xV DENOTES VOLTAGE) (xP DENOTES NUMBER OF POLES)
	EARTH BAR
	TP&N DISTRIBUTION BOARD
	PUSH BUTTON (EMERGENCY STOP/MUSHROOM HEAD)
A	SURFACE LED LINEAR LUMINAIRE 'E' DENOTES EMERGENCY

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DO NOT SCALE OFF THIS DRAWING

DESIGNERS RISK ASSESSMENT
Under section 11, 18 - Construction (Design and Management) Regulations 2015

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION
There are no significant, unusual or location specific risks which are not obvious to a competent contractor or likely to be difficult to manage

NOTES:

1. PLEASE REFER TO THE UTILITY SERVICES EXISTING REPORT FOR DETAILS OF THE ORIGINAL SEARCH INFORMATION AND INSTRUCTION FROM THE RESPECTIVE UTILITY COMPANY WHEN WORKING WITHIN/NEAR THEIR APPARATUS.
2. PRECISE LOCATIONS FOR PLANT AND EQUIPMENT SHALL BE VERIFIED VISUALLY ON SITE BY THE CONTRACTOR I.E. PAS 128 SURVEY CATEGORY TYPE C 'UNDERGROUND UTILITIES PLOTTED FROM UTILITY RECORD DATA ONLY, BUT WITH SITE RECONNAISSANCE TO MATCH UTILITY RECORD WITH PHYSICAL UTILITY STREET FURNITURE AS A BEST FIT'.
3. SITE UTILITY MAPPING VIA MULTIPLE GEOPHYSICAL INSTRUMENTS SUCH VIA GROUND PENETRATING RADAR AND "CAT" SCANNER SURVEY FOR HORIZONTAL AND VERTICAL ACCURACY SHALL BE CARRIED OUT BY THE CONTRACTOR I.E. PAS 128 SURVEY CATEGORY TYPE B 'AN ON-SITE UTILITY MAPPING SURVEY USING MULTIPLE GEOPHYSICAL INSTRUMENTS. THE OUTPUT FROM THIS SURVEY SHALL BE EACH LINEAR 5 METRE SECTION OF UTILITY DEPICTED AS A QUALITY LEVEL (QL) 1–4 FOR HORIZONTAL AND VERTICAL DETECTION ACCURACY.
4. UTILITY VERIFIED AND POSITIONED BY PHYSICAL IDENTIFICATION BY STRATEGICALLY POSITIONED VACUUM EXCAVATION, HAND DUG TRIAL PITTING OR BY VISUAL INSPECTION WITHIN A UTILITY CHAMBER I.E. PAS 128 SURVEY CATEGORY TYPE A SHALL BE CARRIED BY THE CONTRACTOR AT WHERE EXISTING SERVICES ROUTE THROUGH THE DEVELOPMENT AND ATTHE NEW MAIN SITE ACCESS AND EGRESS ROAD LOCATIONS.

NOTES:

1. ALL PERSONS INVOLVED IN EXCAVATIONS SHOULD CONSULT HSG 47 "AVOIDING DANGER FROM UNDERGROUND SERVICES".
2. ALL UNDERGROUND SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH NJUG – GUIDELINES ON THE POSITIONING AND COLOUR CODING OF UTILITIES APPARATUS.
3. THE DIMENSIONS SHOWN REPRESENT THE PREFERRED ARRANGEMENT, VARIATIONS MAY BE NECESSARY AT CURVES AND CHANGES OF DIRECTION.
4. THE UTILITY SERVICES SHOULD BE LAID AT A MINIMUM DEPTH AS FOLLOWS (UNLESS ADVISED OTHERWISE BY UTILITY SERVICES PROVIDES):

   CARRIAGEWAYS
   WATER – 900mm
   ELECTRICITY – 600mm
   TELECOMMS – 600mm
   GAS – 700mm

   NON CARRIAGEWAYS
   WATER – 750mm
   ELECTRICITY – 450mm
   TELECOMMS – 350mm
   GAS – 600mm

5. ALL SERVICES TO BE CONTAINED IN DUCTS WHERE THEY CROSS THE ACCESS ROAD AS FOLLOWS:

   WATER – RIGID DUCT (BLUE)
   ELECTRIC – RIGID DUCT (BLACK)
   GAS – RIGID DUCT (YELLOW)
   BT TELECOMMS – RIGID DUCT (GREY)
   EXTERNAL LIGHTING – RIGID DUCT (BLACK)
   PRIVATE COMMS – RIGID DUCT (GREEN)

6. SERVICE DUCTS AND DRAW PITS ARE TO BE INSTALLED TO UTILITY PROVIDERS SPECIFICATION/ DETAILS. I.e. SPECIFICATION, SIZE, MATERIAL, TYPE, COLOUR ETC.
7. MARKER/WARNING TAPES SHALL BE INSTALLED FOLLOWING INSTALLATION OF SERVICES.
8. ALL WORKS AND MATERIALS/ SPECIFICATIONS TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE UTILITY SERVICE PROVIDERS REQUIREMENTS.
9. THIS LAYOUT IS TO BE READ IN CONJUNCTION WITH THE EXISTING RECORD DRAWINGS AND BELOW GROUND DRAINAGE DESIGN.
10. ALL DUCTS TO HAVE SLOW 30 DEGREE RADIUS BENDS AND TO BE PROVIDED WITH DRAW ROPES. ALL DUCTS TO BE SMOOTH BORE WITH NO PROTRUSIONS INTO THE DUCTWORK.
11. IT IS RECOMMENDED THAT A GPRS SCAN IS CARRIED OUT OF THE SITE BY A SPECIALIST SURVEY COMPANY TO IDENTIFY ANY UNKNOWN SERVICES TO DETAIL ON THE UTILITY SERVICES LAYOUTS. TO BE INCLUDED IN CONTRACTORS TENDER.
12. ON COMPLETION ALL DUCTS SHALL BE SEALED AGAINST MOISTURE AND VERMIN INGRESS.
13. MANHOLES LOCATED IN HARD STANDING AREAS WHEREVER POSSIBLE, MANHOLES IN ROADWAYS AND ROUTES OF HEAVY TRAFFIC TO HAVE HEAVY DUTY COVERS.
14. MANHOLES TO BE FITTED WITH SOAK AWAY DRAIN IN THE BASE TO ASSIST WITH DRAINAGE.
15. ANY NEW TRENCHING IN THE PROXIMITY OF EXISTING SERVICES TO BE SUITABLY IDENTIFIED VIA TRIAL PITS AND CAT SCANS AND HAND DUG TO AVOID DAMAGE BY MACHINERY/PLANT ETC.
16. ONLY ACCEPTABLE BEDDING AND BACK FILL MATERIAL TO BE USED IN SERVICE TRENCHES I.E.PEA GRAVEL, WASHED SHARP SAND, CRUSHED STONE (SMALLER THAN 20MM) OR SAND/GRAVEL MIX, STRICTLY IN ACCORDANCE WITH UTILITY SERVICES PROVIDERS SPECIFICATION/REQUIREMENTS.
17. SERVICE ROUTES SHOWN ON THE DRAWING IS PROVISIONAL BASED ON THE INFORMATION RECEIVED FROM THE SERVICE PROVIDER. DEVELOPER/CONTRACTOR SHALL FINALISE THE ROUTES WITH ALL UTILITY PROVIDERS PRIOR TO INSTALLATION.
18. REFER TO DNO QUOTATION AND DESIGN PROPOSAL FOR HV & LV INCOMING POINT OF CONNECTION DETAILS.
19. CONTRACTOR SHALL LIAISE WITH THE STRUCTURAL ENGINEER FOR THE CABLE ENTRY THE BUILDING UNDER THE GROUND FLOOR STRUCTURAL SLAB
20. ALL ASD POP-UP CONNECTIONS SHALL BE 100# UNLESS OTHERWISE INDICATED
21. SLIT TRENCHES AND UTILITY MARKING OUT, TO BE CARRIED OUT AT THE NEW SITE ENTRANCE/EGRESS LOCATIONS

STA	REV	DESCRIPTION	DES	CHD	DATE
-	P01	PRELIMINARY ISSUE	MH	GP	12.01.23

PURPOSE OF ISSUE
PRELIMINARY ISSUE

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CLIENT
PCS

PROJECT
LAND AT GRANGE MOOR

TITLE
ELECTRICAL SERVICES
DNO & CUSTOMER SUBSTATION
& SWITCHROOM ROOMLAYOUT

SCALE	ORIGINAL SIZE	DATE
1:20	A0	JAN 23
DRAWN	DESIGNED	CHECKED
JV	MH	GP

PROJECT I ORIGINATOR I ZONE I LEVEL I TYPE I ROLE I CLASS I NUMBER	REVISION
P1948-NOV-XX-XX-DR-E-9602	P01