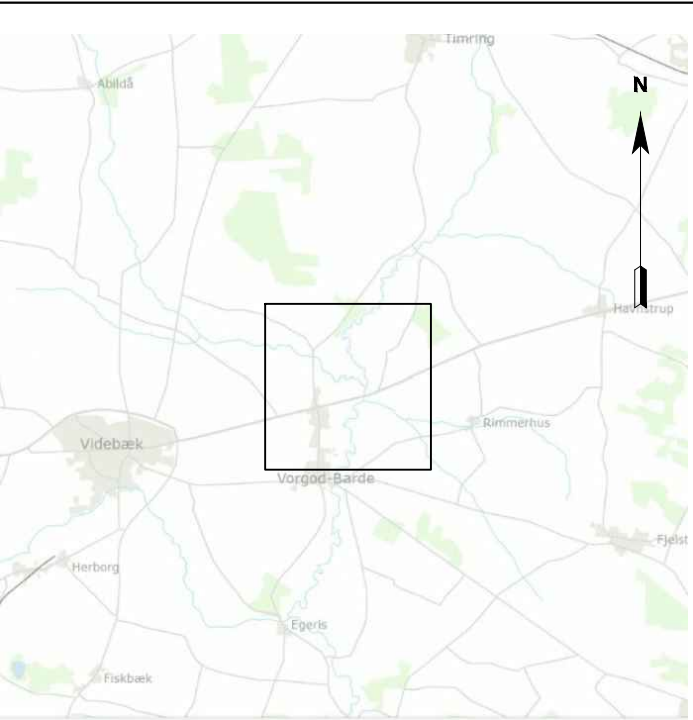


L:\projekter\207001-208000\207865_Energinet_150_kV_Midt- og vestjylland_HDD_ID017_Tegninger\207865_Situationsplan.dwg 2023-12-06 kdu A3 (1C.01)



Legend:

Boreholde with CPT

a: Point no.
b: Level



Planned cable route

Planned HDD

Location of longitudinal profile (Encl. 3.1.3)

ERT line (Encl. 3.4)

Coordinate system: UTM32E89

Level: DVR90



Project: 207865. HESV-VID - Forundersøgelser for HDD

Subject: Siteplan - Location 1C

Scale 1:1000 (A3)

Report 3

Page 1 / 1

Encl. 3.1.2

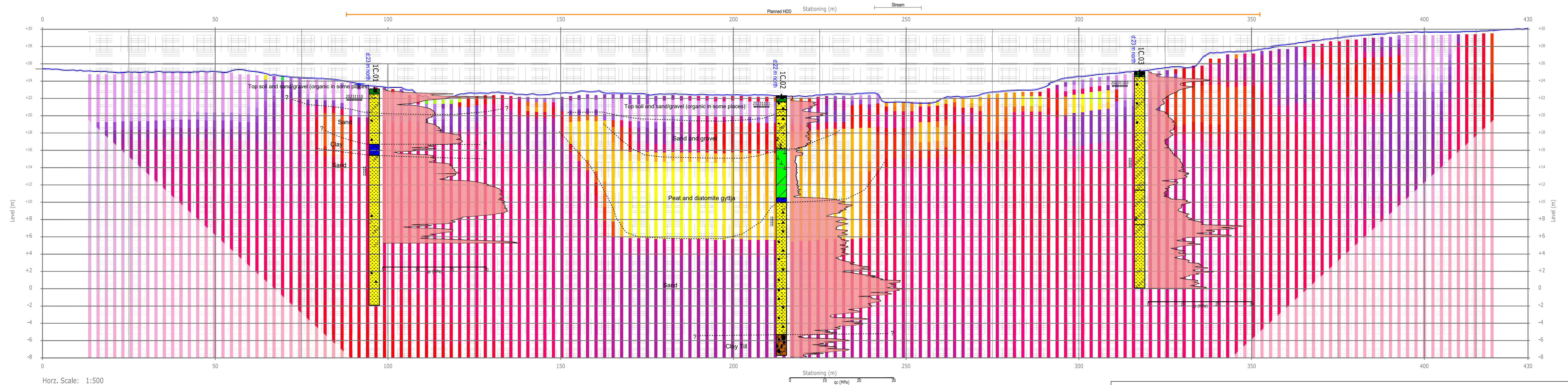
Rev.

GEO

Copenhagen
Aarhus

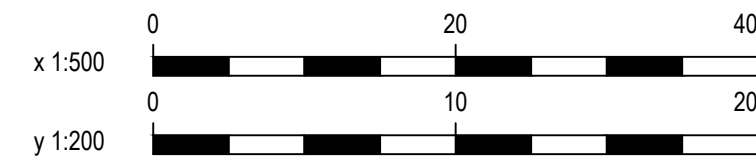
+45 4588 4444
+45 8627 3111

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Horz. Scale: 1:500
Vert. Scale: 1:200

- Top soil / Fill
- Sand / Gravel
- Clay till
- Silt
- Clay
- Clay/peat -postglacial
- Terrain (Dansk Højde Model)
- Borehole
- Cone penetration test tip resistance, q_c
- Distance between ERT-line and borehole
- Planned HDD
- ERT profile: 1C-1



Geo-Standard: Legends and Abbreviations

Borehole Profiles. Geotechnical, cored and environmental boreholes

Description according to dgf-Bulletin 1, Rev. 1, May 1995

Soil Types	Samples	Well installation
 Fill  Flags / Bedrock / Concrete  Mull  Humic  Peat  Peat mull  Peaty mud  Gyttja / Organic clay  Plant remains  Shells	 Slags  Stone  Gravel  Sand  Silt  Clay  Limestone / Chalk  Flint / Asphalt  Sand till (clayey, gravelly)  Clay till (sandy, gravelly)	Bag sample (disturbed), specific level Bulk sample (disturbed) of an interval, small bag Intact tube sample SPT sample or Bulk sample (disturbed) of an interval, large bag Core sample Additional laboratory tests available for Sample 7 Pipe dimension and -type Blind pipe Screened pipe Concrete Backfill material Sealing Filter sand

Deposit	Geological age	General abbreviations
Ae Aeolian (wind)	Re Recent	sl. slightly
Br Brackish	Pg Postglacial	v. very
Fi Fill	Lg Lateglacial	w. with
Fw Freshwater	Gc Glacial	lam. lamina(e)
Gl Glacier	lg Interglacial	fragm. fragments
Gr Igneous / Metamorphic / Bedrock	ls Interstadial	biot. bioturbation
Ls Landslide	Te Tertiary	bryo. bryozoans
Ma Marine	Nn Neogene (late Tertiary)	calc. calcareous
Mw Meltwater	Pn Paleogene (early Tertiary)	noncalc. noncalcareous
Ss Solifluction	Mi Miocene	glauc. glauconite
Ts Topsoil	Ol Oligocene	
Vo Volcanic	Eo Eocene	T top of sample
Wd Wash down	Pl Paleocene	B bottom of sample
	Se Selandien	
	Da Danien	
	Kr Cretaceous	
	Ju Jurassic	
	Tr Triassic	
	Si Silurian	
	Ca Cambrian	
	Pk Precambrian	

Core samples

Recovery: Ratio in percentage between sample length and length of core run (Total Core Recovery, TCR). Value appears at top of core run.

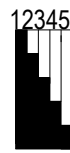
RQD: Rock Quality Designation. Ratio in percentage between total length of core pieces with length more than 100 mm, and length of core run. Value appears at top of core run.

Fractures



1 = S1	Unfractured	No fractures
2 = S2	Slightly fractured	Fracture spacing larger than 10 cm
3 = S3	Fractured	Fracture spacing between 6 and 10 cm
4 = S4	Very fractured	Fracture spacing between 2 and 6 cm
5 = S5	Crushed	Fracture spacing less than 2 cm

Induration



1 = H1	Unlithified	Can easily be shaped with fingers
2 = H2	Slightly indurated	Can easily be worked with knife
3 = H3	Indurated	Can be worked with knife
4 = H4	Strongly indurated	Can be scratched with knife
5 = H5	Very strongly indurated	Cannot be scratched with knife

Forsøg

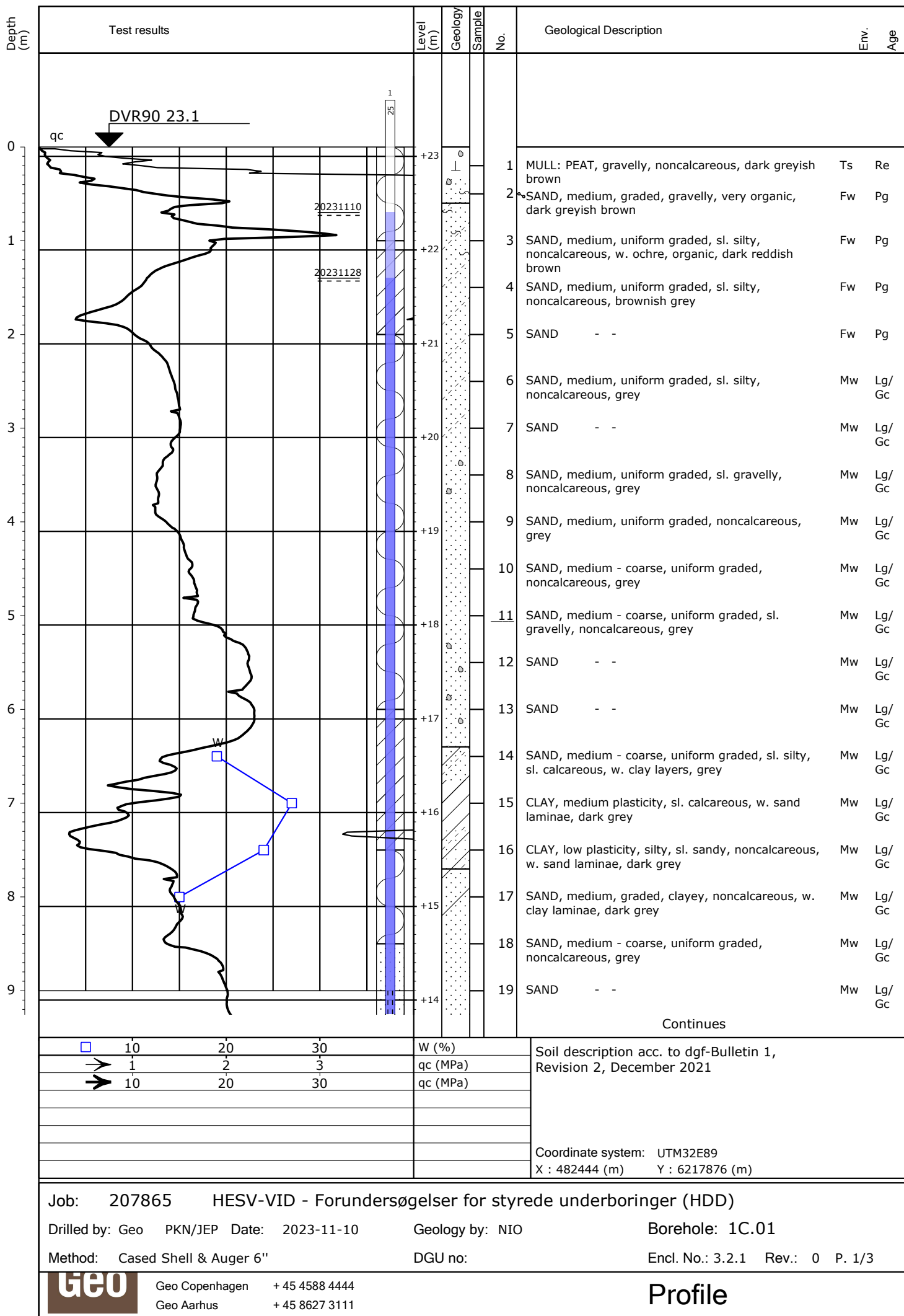
c_{fv}	Shear strength	(kN/m ²)	Measured by vane test in undisturbed soil
c_{rv}	Shear strength	(kN/m ²)	Measured by vane test in remoulded
N	Standard penetrations test (SPT)		Number of blows per 0.3 m penetration of Ø51 mm SPT probe by use of the energy $h \bullet G = 0,76 \text{ m} \bullet 0,635 \text{ kN}$
w	Water content	(%)	Ratio between weight of water and weight of grains
w_p	Plastic limit	(%)	Water content at the boundary between semisolid and plastic state; NP: Non plastic
w_L	Liquid limit	(%)	Water content at the boundary between plastic and liquid state
I_p	Plasticity index	(%)	$w_L - w_p$
γ	Unit weight	(kN/m ³)	Ratio between total weight and total volume
e	Void ratio		Ratio between pore volume and grain volume
e_{max}	Void ratio, loosest state		Void ratio of very loose standard state
e_{min}	Void ratio, densest state		Void ratio of very dense standard state
I_D	Relative density		$(e_{max} - e) / (e_{max} - e_{min})$
k_a	Carbonate content	(%)	Ratio between weight of carbonate and total grain weight
gl	Loss of ignition	(%)	Weight loss by prolonged heating, in percent of total grain weight

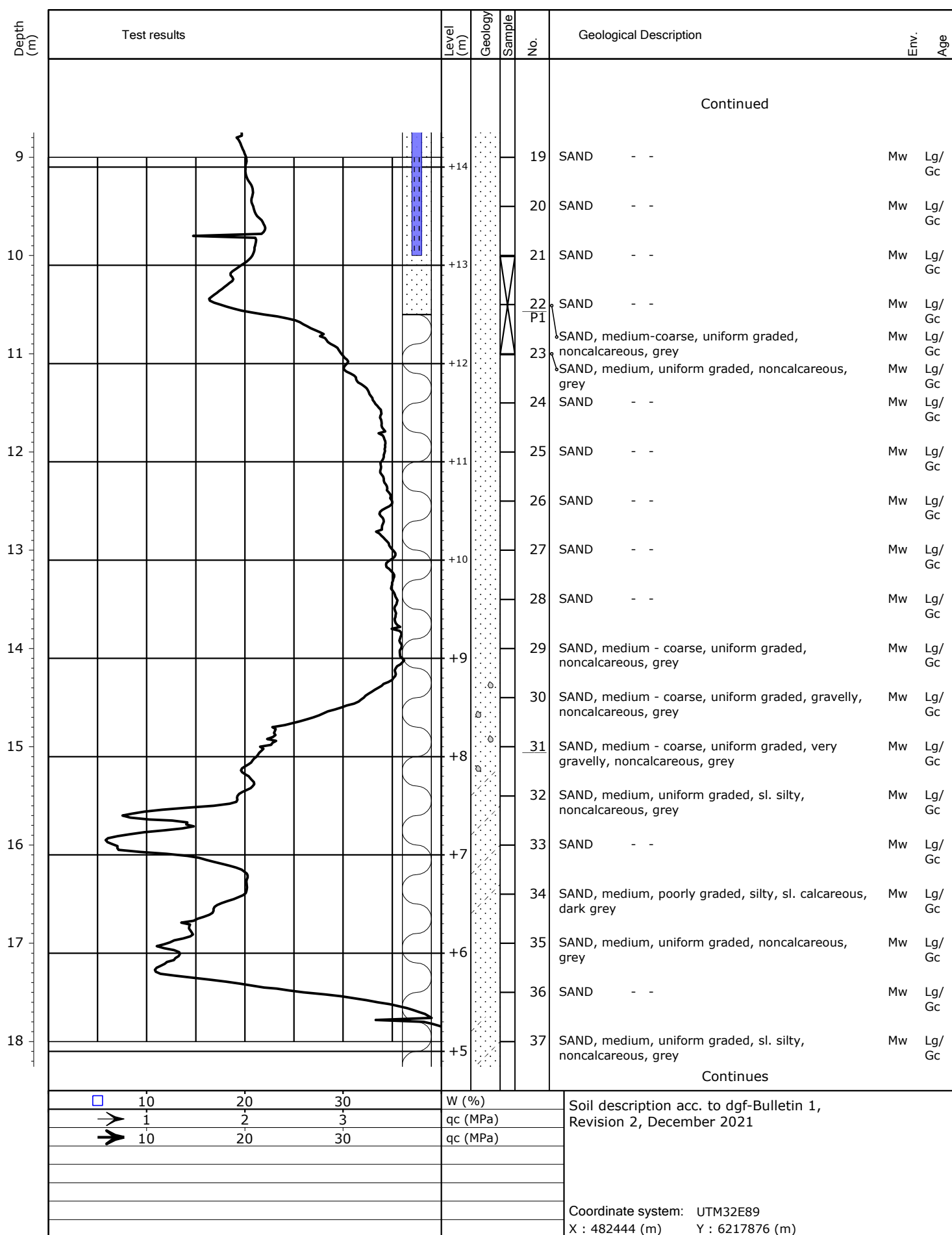
Additional tests, referenced at the borehole profile

In situ tests:		Laboratory tests:	
PR	Pressiometer	B	Brazil
FH	Falling Head	C	Consolidation
PP	Pumping	D	Specific gravity
EL	Elastmeter	E	e_{max} and e_{min}
GA	Gammalog	F	Photo
		G	Grain size analysis
		P	Point load
		S	Simple shear
		T	Triaxial
		U	Unconfined compression
		V	Shear box
		W	Vibration compaction
		SP	Standard proctor test
		MP	Modified proctor test

References

Danish Standard:	Danish Geotechnical Society:	Danish Geotechnical Society:
DS/EN 1997-1:2007 – Geoteknik-Del 1	- "A guide to engineering geological soil description" (dgg-Bulletin 1, Rev. 1, May 1995)	- "Laboratoriehåndbogen" (dgg-Bulletin 15)
	- "Felthåndbogen" (dgg-Bulletin 14)	- "Referenceblad for vingeforsøg"
		- "Referenceblad for SPT-forsøg"





Job: 207865 HESV-VID - Forundersøgelser for styrede underboringer (HDD)

Drilled by: Geo PKN/JEP Date: 2023-11-10

Method: Cased Shell & Auger 6"



Profile

[illegible]

Job: 207865 HESV-VID - Forundersøgelser for styrede underboringer (HDD)

Drilled by: Geo PKN/JEP Date: 2023-11-10

Geology by: NIO

Borehole: 1C.01

Method: Cased Shell & Auger 6"

DGU no:

Encl. No.: 3.2.1 Rev.: 0 P. 3/3



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Geo Aarhus	+ 45 8627 3111

Profile

