Revised Manuscript based on Referee Comments

I deeply appreciate for the review of the paper. I am very happy to change the errors of the manuscript based on referee comments. The change is following as,

01: Page 392 line 26, add expansion of RR

the algorithm of RR → the algorithm of **repair rate (RR)**

02: Page 393 Line 1,

peak ground velocity (PPV) → peak ground velocity (**PGV**)

03: Page 402 - Table 2

Table 2. Required minimum embedded depth for buried pipeline as loading is applied to ground surface (Ministry of Land, Transport, and Maritime Affairs, 2010)

Pipeline Diameter (D)	Required minimum embedded depth (mm)
D ≤ 900 mm	1,200 mm
D ≥ **1000 mm**	D ≤ and ≥ 1,500 mm

04: Page 404 - Table 4 (actual input values used in numerical analyses)

Table 4. Mechanical characteristics of soils used in numerical analysis

Soil types	γ (kN/m^3)	E (MPa)	υ	c (kPa)	ϕ (°)
Clay	**15.0**	5	0.35	10	20
Loose sand	**18.6**	15	0.3	0	25
Medium dense sand	**19.0**	25	0.3	0	28
Dense sand	**19.4**	45	0.3	0	30
Dense sand and gravel	**20.0**	120	0.25	0	35

05: Page 395 Line 22

the mobilized stress in pipelines linearly increases as PGA increases and ground stiffness decreases → **the mobilized stress in pipelines linearly increases as PGA increases and the stiffness of ground such as medium dense sand, dense sand, and gravel decreases. However, the mobilized stress in pipelines is slightly larger for loose sand than that for clay. It is explained by the complexity of ground stiffness determined by higher friction angle and no cohesion for loose sand and lower friction angle and cohesion of 10 kPa for clay.**

05: Page 396 Line 14

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