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29 May 2020

Hong Kong Broadband Network Limited

Environmental Impact Assessment (EIA) Ordinance, Cap.499
Environmental Permit (EP) No. EP-570/2019
TKO Connect Cable System
EP Condition 2.1 – Changes to Cable Alignment

I refer to the letter dated 20 May 2020, submitting the proposal on the changes to cable alignment by your consultant, SMEC Asia Limited, under Condition 2.1 of Environmental Permit EP-570/2019 for the captioned project.

Based on the information provided, we note that the proposed realignment of the cable section is to avoid encroachment into Drainage Reserve Area at Siu Sai Wan. With agreement with AFCD and AMO on marine ecological and marine archeological aspects, please be advised that the proposed changes to cable alignment is approved. We will arrange to place a copy of the approved cable alignment at the EIAO Register for public access.

Yours sincerely,

Clara

(Clara Yu)
Senior Environmental Protection Officer
for Director of Environmental Protection

Background

An Application for Permission to Apply Directly for Environmental Permit (AEP-570/2019) was approved by the Director of Environmental Protection for the TKO Connect Cable System (the Project) on 5 July 2019, with submission of a Project Profile to support the application.

An Environmental Permit (EP-570/2019) was granted by EPD to the Project Proponent – Hong Kong Broadband Network Limited (HKBN) on 22 July 2019 for the construction and operation of TKO Connect Cable System.

During government departmental consultation for gazettal under Foreshore and Sea-bed (Reclamations) Ordinance, Drainage Services Department (DSD) raised their concern about a section of cable alignment that will encroach into a Drainage Reserve area at Siu Sai Wan. In response to DSD's comment, the section of cable that will be installed by Horizontal Directional Drilling (HDD) had been realigned to avoid potential impact to DSD's facilities within the Drainage Reserve.

As stipulated in Environmental Permit Condition 2.1, "*The Permit Holder shall obtain prior approval from the Director for any proposed changes in the Project details, including cable alignment, burial depth, trench width and installation methods as described in the Project Profile (Register No. : PP-584/2019).*"

Proposed Changes to the Project

The following summarises the proposed changes to TKO Connect Cable System:

- Cable Alignment: To address DSD's comment regarding their Drainage Reserve, adjustments were made to the section of TKO Connect to be installed by HDD at Siu Sai Wan. The attached ***Figure A*** shows a comparison between the original and revised TKO Connect cable alignment. In the original alignment, Points 1 to 4 represent the first section of the cable alignment to be installed by HDD (shown in light blue as a curved trajectory), followed by the latter section (shown in red) to be installed by cable laying vessel. Adjustments were made at Point 1 where the HDD punch-in point was proposed to be shifted by 6.9m towards the southwest. In addition, the curved trajectory of the HDD section has been straightened to avoid encroaching into the Drainage Reserve, hence the number of control points for the HDD section have reduced and thus the HDD seabed break out point at Point 4 was proposed to be shifted by 35.6m towards the southwest. To ensure smooth installation at the revised HDD seabed break out point by the cable laying vessel, Point 5 was proposed to shift west by 27.8m. A zoomed in drawing showing the proposed changes is provided in the attached ***Figure B***.
- Burial Depth: Remain unchanged as described in the Project Profile.
- Trench Width: Remain unchanged as described in the Project Profile.
- Installation Methods: Remain unchanged as described in the Project Profile.

Environmental Impact of Revised Cable Alignment

With the change in alignment, SMEC as the consultant for HKBN has revisited the environmental impacts based on the revised alignment. Detailed assessments of the potential environmental impacts have been addressed with the sensitive receivers shown in Figure 1-3 of the approved Project Profile (PP). The following provides a summary to the environmental impacts in relation to the change in alignment:

Water Quality

Figure 1-3 of the PP shows that WSD Siu Sia Wan Salt Water Pumping Station is the nearest sensitive receiver to the original alignment (480m). With the revised alignment, the distance between TKO Connect and the pumping station will be about 500m instead. Given the further distance between the pumping station with the revised alignment (more than 180m of the distance travelled of the sediment during cable laying works), it is not anticipated that the revised alignment will cause any adverse impacts to the Water Sensitive Receiver. Other than that, there are no further impacts and those described in Section 4.2 and Annex A of the approved Project Profile still remains valid.

Waste

The waste impacts described in Section 4.3 of the approved Project Profile still remains valid and will not be affected by the change in alignment.

Marine Ecology

The revised cable alignment will be with a straightened HDD section and punch out point slightly shifted towards the west. As confirmed by geophysical/dive survey conducted in January 2018, the HDD break out location lies in an area with dumped material composed of soft marine mud that was being dredged previously, which is considered to be very soft materials and not suitable for coral or octocoral growth. Our dive survey also confirmed that no coral was identified at the revised HDD break out location and along the TKO Connect alignment to be installed by direct burial. As concluded in the water quality assessment in Annex A of the approved Project Profile, the extent of sediment spread from the cable laying work shall be 180m. As shown in the attached ***Figure C***, coral were only observed from transects T1 to T4 during coral dive survey for *TKO Express – Cable System*, no hard coral or octocorals were recorded at any of the transects from T5 onwards at more than 250m offshore. As indicated in ***Figure C***, no coral shall be indirectly impacted during cable installation at the revised cable alignment. The approved Project Profile also confirmed that Victoria Harbour is not considered to represent an important habitat for the Indo-pacific Humpbacked Dolphin or the Finless Porpoise and disturbance to these marine mammal species is not expected. No other species of conservation importance was identified along or in the vicinity of the revised cable alignment. It is not anticipated that the revised alignment will cause any adverse marine ecology impact. Section 4.4 and Annex C of the approved Project Profile still remains valid and will not be affected by the change in alignment

Fisheries

The fisheries impacts described in Section 4.5 and Annex D of the approved Project Profile still remains valid and will not be affected by the change in alignment.

Noise

The noise impacts described in Section 4.6 and Annex E of the approved Project Profile still remains valid and will not be affected by the change in alignment.

Cultural Heritage

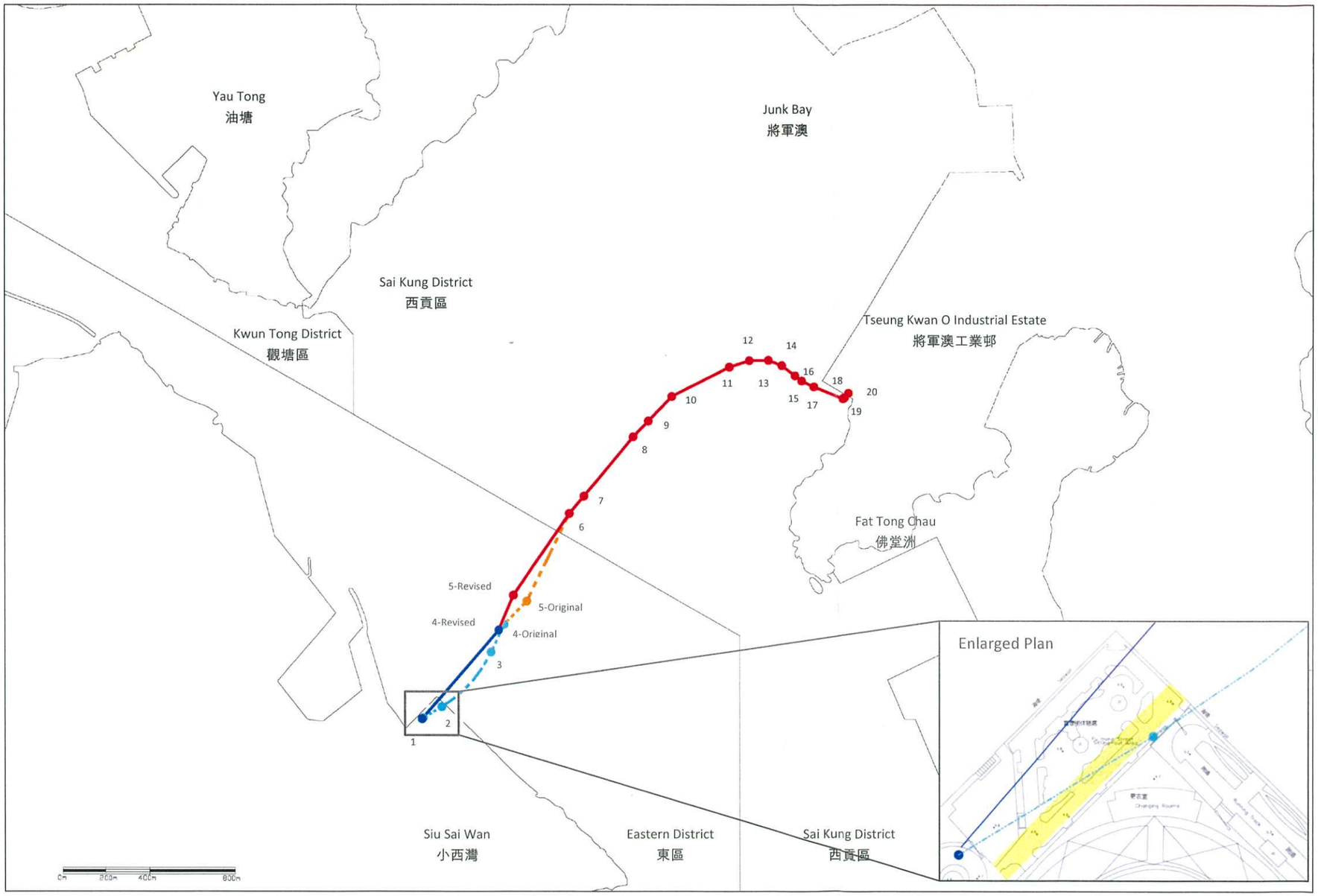
At the first section of the cable alignment to be installed by HDD at Siu Sai Wan, from Point 1 to Point 4, the installation works will be conducted below the Siu Sai Wan Promenade area near Fu Hong Street and below seabed or even below bed rock. No resources of marine archaeological value will be

affected or impacted at this section of the alignment. Side scan sonar and magnetometer data obtained from geophysical survey is shown in ***Figure D***. For the cable alignment sections of concern with proposed changes (from the seawall at Siu Wai Wan to Point 6), no sonic or magnetic contact was found within the 50m impact corridor (25m either side of the cable). The cultural heritage impacts described in Section 4.7 and Annex F of the approved Project Profile still remains valid and will not be affected by the change in alignment.

Conclusion

With the above justifications, it is envisaged that the minor change in alignment does not affect or cause any adverse environmental impacts. The proposed mitigation measures described in the approved Project Profile still applies and meet the requirements described in Section 5(11) of the Technical Memorandum.

Figure A Original and Revised TKO Connect Alignments and Control Points Coordinates



Control Points of TKO Connect
TKO Connect 控制點

	Revised Alignment		Original Alignment	
	Easting(m) 東緯(米)	Northing(m) 北緯(米)	Easting(m) 東緯(米)	Northing(m) 北緯(米)
1	843613.066	814388.403	843618.570	814392.592
2	Not Used	Not Used	843704.026	814444.548
3	Not Used	Not Used	843933.515	814698.172
4	843970.126	814801.404	843995.080	814826.788
5	844039.278	814963.089	844101.643	814935.276
6	844297.687	815342.619	844297.687	815342.619
7	844365.322	815423.490	844365.322	815423.490
8	844594.827	815698.416	844594.827	815698.416
9	844665.210	815772.277	844665.210	815772.277
10	844774.046	815886.208	844774.046	815886.208
11	845039.684	816022.558	845039.684	816022.558
12	845131.730	816053.247	845131.730	816053.247
13	845220.529	816054.774	845220.529	816054.774
14	845283.897	816030.567	845283.896	816030.571
15	845346.244	815982.993	845346.244	815982.993
16	845377.693	815958.991	845377.693	815958.991
17	845434.792	815931.996	845434.792	815931.996
18	845569.940	815876.969	845569.940	815876.969
19	845575.318	815879.468	845575.318	815879.468
20	845596.775	815902.182	845596.775	815902.182

Note: The above cable coordinates are based on the geophysical survey and may be changed slightly during the engineering refinement for the cable installation.

注：上述光纜坐標基於地質測量，在光纜安裝工程微調過程中可能稍有改變。

Key 圖示

- Revised HDD Limit Control Point 更新 HDD 控制點
- Revised Cable Laying Vessel Control Point 更新光纜鋪設船控制點
- Original HDD Limit Control Point 原定 HDD 控制點
- Original Cable Laying Vessel Control Point 原定光纜鋪設船控制點
- Revised TKO Connect – Installation in HDD Duct 更新 TKO Connect – 安裝在 HDD 導管
- Revised TKO Connect – Installation by Cable Laying Vessel 更新 TKO Connect – 由光纜鋪設船鋪設
- Original TKO Connect – Installation in HDD Duct 原定 TKO Connect – 安裝在 HDD 導管
- Original TKO Connect – Installation by Cable Laying Vessel 原定 TKO Connect – 由光纜鋪設船鋪設
- Drainage Reserve 渠務保留地

Figure B **Comparison of Original and Revised TKO Connect Alignments at Siu Sai Wan**

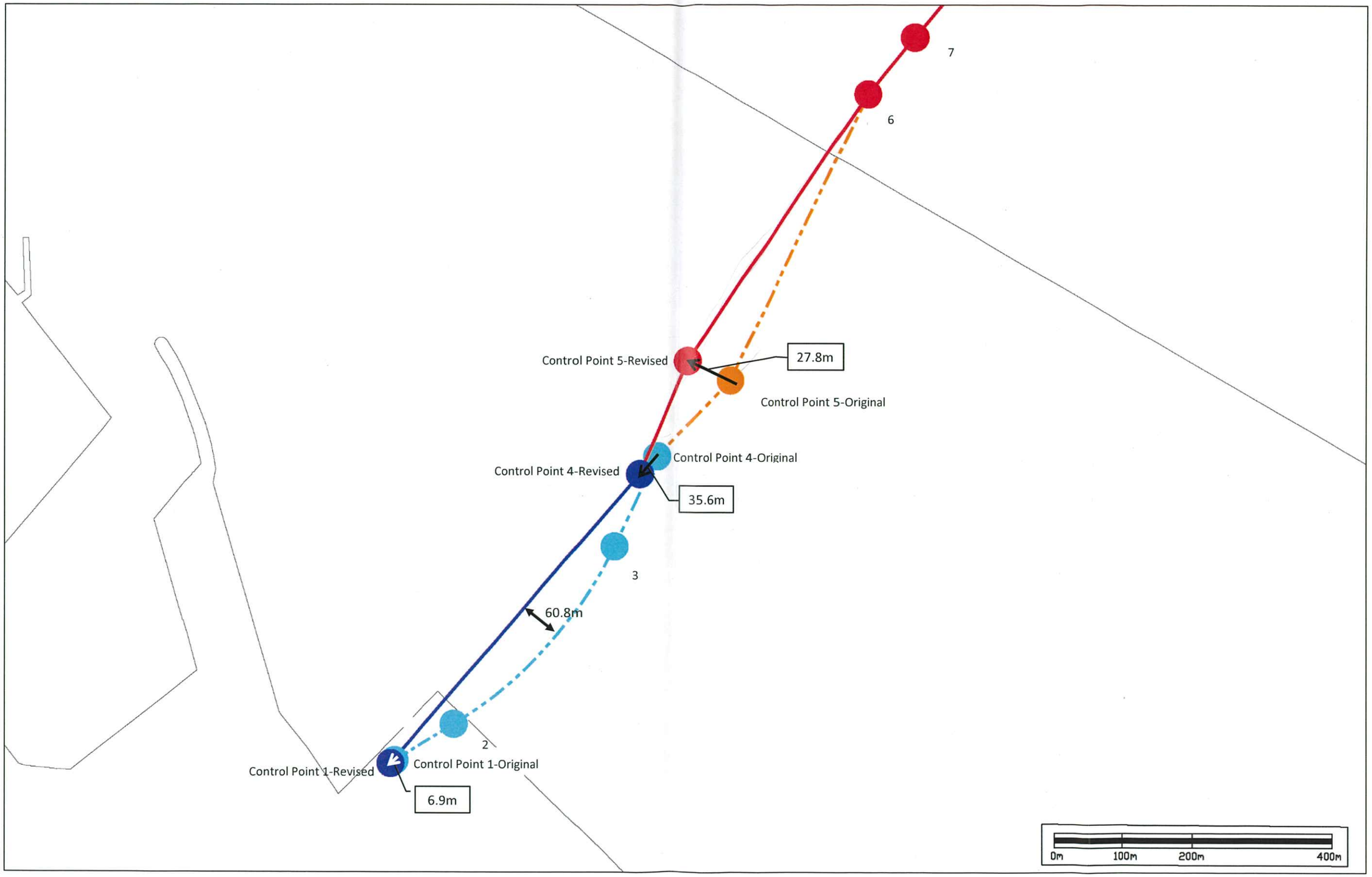


Figure C **Seabed Feature of Revised TKO Connect**

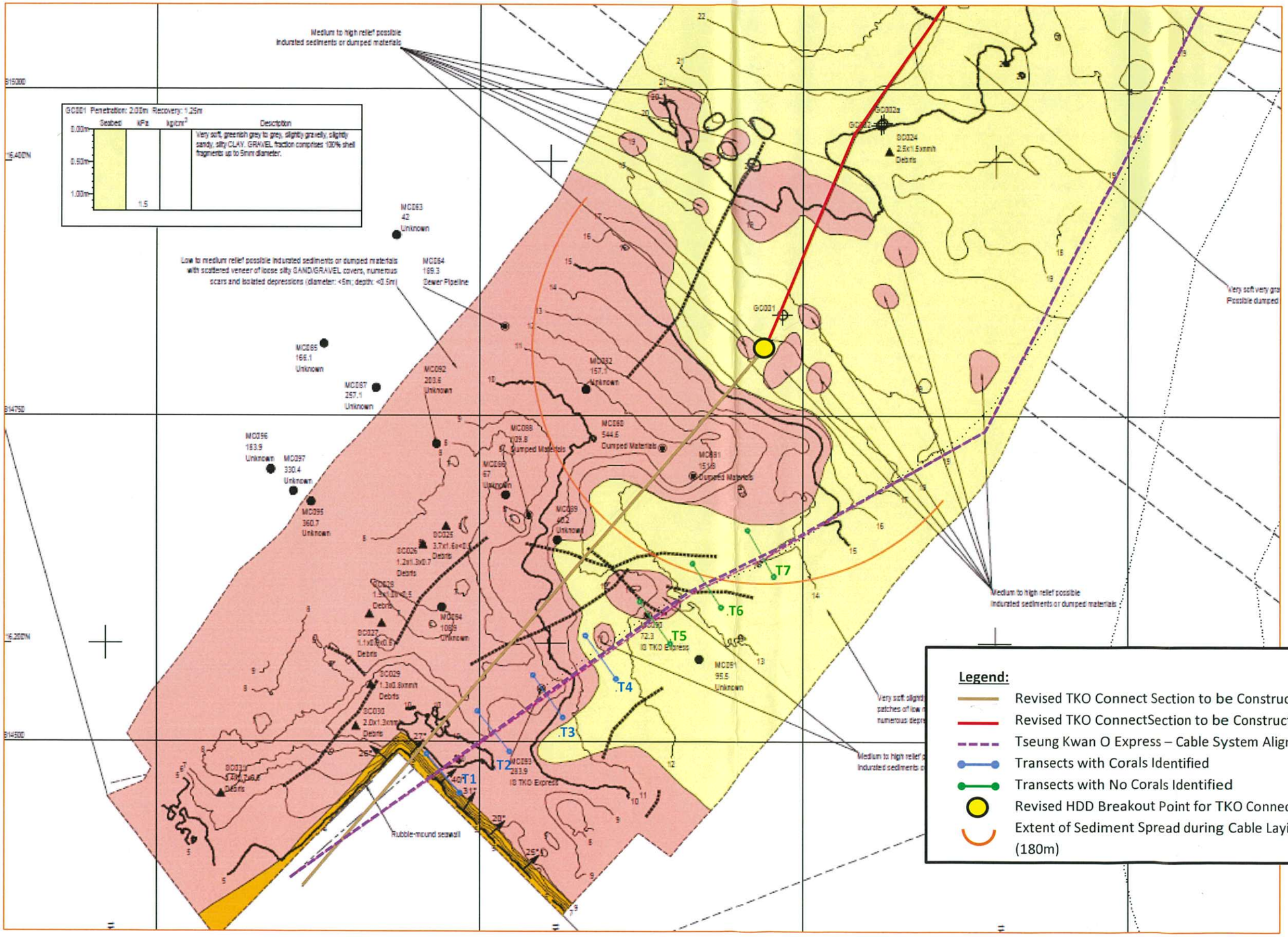


Figure D **Side Scan Sonar and Magnetometer Data for the Revised TKO Connect Alignment**