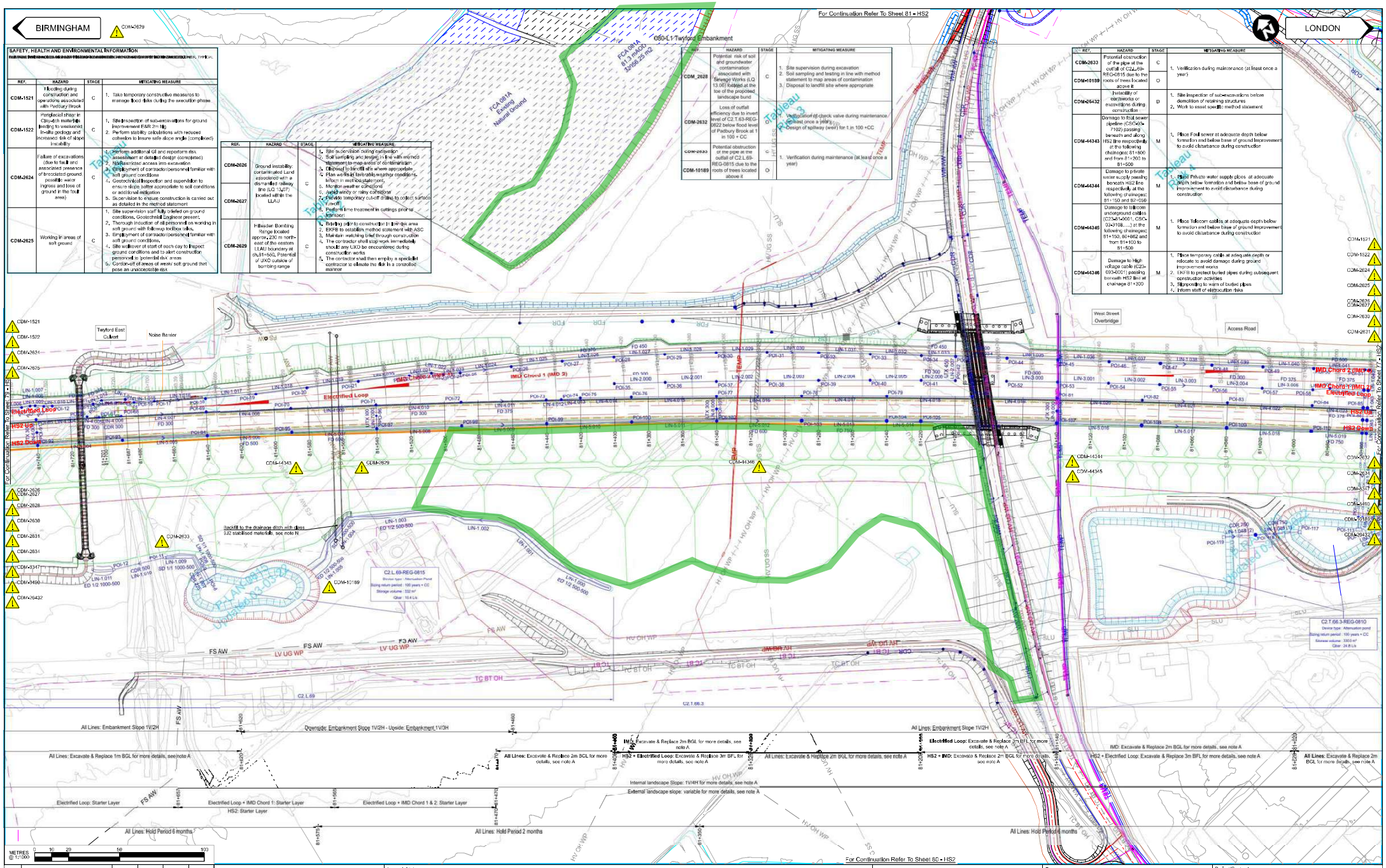

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

REF.	HAZARD	STAGE	MITIGATING MEASURE
CDM-1521	Ponding during construction and operations associated with Pedbury Brook	C	1. Take temporary constructive measures to manage flood risks during the execution phase.
CDM-1522	Peripheral shear in Clay-rich materials leading to weakened in-situ geology and increased risk of slope instability	C	1. Site inspection of sub-excavations for ground improvement E&R 2m BGL 2. Perform stability calculations with reduced cohesion to insure safe slope angle (completed)
CDM-2624	Failure of excavations (due to fault and associated presence of brecciated ground, possible water ingress and loss of ground in the fault area)	C	1. Perform additional GI and reperform risk assessment at detailed design (completed) 2. Not Restricted access into excavation 3. Employment of contractor/personnel familiar with soft ground conditions 4. Geotechnical inspection and supervision to ensure slope batter appropriate to soil conditions or additional mitigation 5. Supervision to ensure construction is carried out as detailed in the method statement
CDM-2625	Working in areas of soft ground	C	1. Site supervision staff fully briefed on ground conditions, Geotechnical Engineer present. 2. Thorough induction of all personnel on working in soft ground with followup toolbox talks. 3. Employment of contractor/personnel familiar with soft ground conditions. 4. Site walkover at start of each day to inspect ground conditions and to alert construction personnel to potential risk areas 5. Cordon-off of areas of weak soft ground that pose an unacceptable risk

REF.	HAZARD	STAGE	MITIGATING MEASURE
CDM-2626	Ground instability: contaminated Land associated with a dismantled railway line (LG 13.07) located within the LLAU	C	1. Site supervision during excavation 2. Soil sampling and testing in line with method statement to map areas of contamination 3. Disposal to landfill site where appropriate 4. Plan works at favorable weather conditions, inform in method statement. 5. Monitor weather conditions 6. Avoid windy or rainy conditions 7. Provide temporary cut-off drains to collect surface run-off 8. Perform lime treatment in cuttings prior to transport
CDM-2627			
CDM-2629	Hillsedar Bombing Range located approx. 230 m north-east of the eastern LLAU boundary at ch.81+560. Potential of UXO outside of bombing range	C	1. Briefing prior to construction in low risk area 2. EKFB to establish method statement with ASC 3. Maintain watching brief through construction 4. The contractor shall stop work immediately should any UXO be encountered during construction works 5. The contractor shall then employ a specialist contractor to eliminate the risk in a controlled manner

REF.	HAZARD	STAGE	MITIGATING MEASURE
CDM_2628	Potential risk of soil and groundwater contamination associated with Sewage Works (LG 13.06) located at the toe of the proposed landscape bund	C	1. Site supervision during excavation 2. Soil sampling and testing in line with method statement to map areas of contamination 3. Disposal to landfill site where appropriate
CDM-2632	Loss of outfall efficiency due to invert level of C2.T.63-REG-0822 below flood level of Pedbury Brook at 1 in 100 + CC	C	1. Verification of check valve during maintenance (at least once a year) 2. Design of spillway (weir) for 1 in 100 +CC
CDM-2633	Potential obstruction of the pipe at the outfall of C2.L.69-REG-0815 due to the roots of trees located above it	C	1. Verification during maintenance (at least once a year)
CDM-10189		O	

REF.	HAZARD	STAGE	MITIGATING MEASURE
CDM-2633	Potential obstruction of the pipe at the outfall of C2.L.69-REG-0815 due to the roots of trees located above it	C	1. Verification during maintenance (at least once a year)
CDM-10189		O	
CDM-26432	Instability of earthworks or excavations during construction	D	1. Site inspection of sub-excavations before demolition of retaining structures 2. Work to asset specific method statement
CDM-44343	Damage to foul sewer pipeline (CSC06-7102) passing beneath and along HS2 line respectively at the following chainages: 81+600 and from 81+200 to 81+500	M	1. Place Foul sewer at adequate depth below formation and below base of ground improvement to avoid disturbance during construction
CDM-44344	Damage to private water supply pipes beneath HS2 line respectively at the following chainages: 81+150 and 82+050	M	1. Place Private water supply pipes at adequate depth below formation and below base of ground improvement to avoid disturbance during construction
CDM-44345	Damage to telecom underground cables (C2S-81+0601, CSC-03-3108.....) at the following chainages: 81+150, 80+862 and from 81+100 to 81+500	M	1. Place Telecom cables at adequate depth below formation and below base of ground improvement to avoid disturbance during construction
CDM-44346	Damage to High voltage cable (C2S-093-4001) passing beneath HS2 line at chainage 81+300	M	1. Place temporary cables at adequate depth or relocate to avoid damage during ground improvement works 2. EKFB to protect buried pipes during subsequent construction activities 3. Signposting to warn of buried pipes 4. Inform staff of obstruction risks

METRES @ 1:1000	0	10	20	50	100

C01	Updated in line with comments	AM	GB	RP
		08/04/2022	08/04/2022	29/04/2022
P03	Internal Review	AM	JB	
		05/04/2022	05/04/2022	
P02	Internal Review	AM	JB	
		31/03/2022	31/03/2022	
P01	First issue	AM	JB	RP

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Legende/Notes:

GENERAL

A. For notes, keys, and typical details, see document: Earthworks and Drainage Layout Plans - Legends and Notes, 1MC06-CEK-CV-DGA-C0002-000699
B. Utilities legend: refer to utilities layouts: 1MC06-CEK-UT-DGA-C002-000022, C03; 1MC06-CEK-UT-DGA-C002-000023, C03; 1MC06-CEK-UT-DGA-C002-000024, C03
C. Single large aggregate layer of geogrid to be provided under all S&C and associated 27m of main line either side of S&C
D. This drawing has been designed against PMA 2.4 hence we are not showing the trap point highlighted in PMA 3.3 recently instructed GEOTECHNICAL
E. Refer to structure drawings for the following assets: HS2-000001428 Twyford East Culvert, As well as the earthworks transitions: 1MC06-CEK-CV-DGA-CS06_CL10-000010 Twyford East Culvert Earthworks transition
F. For more details about Instrumentation & Monitoring, refer to Twyford Embankment - Designers Monitoring Plan: 1MC06-CEK-GT-REP-CS06_CL10-000023
G. For more details about ground surface levels refer to: Earthworks Sections - Twyford Embankment: 1MC06-CEK-CV-DGE-CS06_CL10-000005
H. Hold period starting after fill is placed up to Formation Level, or following placement of surcharging, where this is required, for more details about the surcharge, refer to drawing 1MC06-CEK-GT-DGE-C0002-000072
I. Spot ground: Site Inspection and verification testing to confirm minimum Cu 50kPa at foundation level prior to constructing the embankment
J. Relic slip features: Trial trenches shall be carried out prior to construction of the embankment to verify the absence of relic slip surfaces in the OXC soils down to 5m BGL. These trial trenches will be located between ch. 80+862 and 81+220. Trial pits shall be inspected by a competent geotechnical engineer
K. All excavations shall be inspected by a suitable competent engineer to confirm expected ground conditions and report any unexpected ground conditions and so forth ...y unexpected ground conditions such as relic shear surfaces, seepages, soft clays and/or more sandy

- Technical Specification [1MC06-CEK-AL-SPE-CS06-000001]

: Drainage Cunette and Central Channel Access Chamber Details 1MC06-CEK-DR-DGE-C0002-000107

HS2

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Birmingham, B4 6GA

Zone: CS06			Project/Contract: 1MC06
Design Stage: DETAILED DESIGN			Discipline/Function: Civil
Drawing Title: Earthworks and Drainage Layout - Sheet 78	Drawn: A.Mathieu-Gabeller	Checked: G.Bourgeois	Approved: R.Platt
	Date: 29/04/2022	Scale: 1:1000	Size: A1
Creator/Originator: CEK	Design Status: A4	Suitability: Suitable for Detailed Design	Drawing No.: 1MC06-CEK-CV-DGA-CS06_CL10-000026
			Rev.: C01

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