

**5. Health and Safety file requirements**

All information will be produced in an electronic format. The format of the electronic data issued is to be as follows: All documents and product data sheets are to be in PDF format, drawings are to be in PDF and AutoCAD DWG format.

The Principal Contractor shall collate all appropriate information as it becomes available, and this shall subsequently be collated in the File. The Principal Contractor is to implement an early procedure that advises contractors and materials suppliers of the detailed requirements for this record information. The health and safety file will be created and/or updated in accordance with the requirements of the IAN105/08.

## Appendix A - Location Plan

Refer to drawing no. HE570131D-KIER-HGN-M5\_J22\_J23\_ML\_A-DR-CH-000001.

## Appendix B - Construction Drawings

Reference	Rev	Title
HE570131D-KIER-VGN-M5_J22_J23_ML_A-DR-CH-010001	C3	SURVEY LOCATION PLAN SHEET 1 OF 2
HE570131D-KIER-VGN-M5_J22_J23_ML_A-DR-CH-010002	C3	SURVEY LOCATION PLAN SHEET 2 OF 2

## Appendix C – Existing Records and As-Built Drawings

Reference	Rev	Title	Company
BW 5024/TED/1064/0004	Z	New Road Bridge General Arrangement	Highways Agency
405/201/B09/2/B	B	New Road Bridge General Arrangement	Somerset County Council
405/201/B09/3/A	A	New Road Bridge Foundation Plan and Column Details	Somerset County Council

## Appendix D - Statutory Undertaker Drawings

Reference	Rev	Title	Company
HE570131D-KIER-HGN-M5_J22_J23_ML_A-DR-CH-010004	C1	STATUTORY UNDERTAKERS PLAN SHEET 1 OF 2	Combined stats plan
HE570131D-KIER-HGN-M5_J22_J23_ML_A-DR-CH-010005	C1	STATUTORY UNDERTAKERS PLAN SHEET 2 OF 2	Combined stats plan

## Appendix E – Overhead cables

Service Type	Service Details	Service owner	Marker Post	OSGR
Electricity	11 kV cable crossing	Western Power Distribution	MP 183/4+60m	332645, 145805
Electricity	11 kV cable crossing	Western Power Distribution	MP 184/5+30m	332376, 144774

## Appendix F - List of Structures

Structure Name	Structure Type	Structure Number	Structure Key	Structure headroom (m)	Marker Post	OSGR
New Road	Overbridge	/M5//183.50//	1814	5.1m	183/5+30m	332630, 145746
Withy Road	Overbridge	/M5//184.70//	1816	5.1m	184/6+30m	332351, 144677

**Appendix G - Asbestos Action Plans and Surveys***Asbestos Action Plans*

Electronic file name	Asset	Plan Status	Date
020 AAP M5 J19_J24_	M5 J19 to J24 S/B & N/B	Initial Plan	June 2008
109 M5 J19-24 mp 145.20-196.1 review	M5 J19 to J24 S/B & N/B	Review of AAP	December 2013
109 B M5 19-24	M5 J19 to J24 S/B & N/B	Monitoring inspection	February 2014

*Asbestos Surveys*

Electronic file name	Location	Survey Type	Date
M5 J19 J24	M5 J19 - J24 Northbound and Southbound	Type 2	14.04.08
M5 J22-23 mp179 9-184 7 Drainage	M5 Junction 22 – 23 Drainage	Refurbishment	February 2014
Lucion_reports_148799	M5 Junction 22 – 23 MP 179.9 – 184.4 Drainage	Refurbishment	16.01.2017

### General Note:

During the design stages of a project, designers are required to maintain a **"Hazard Elimination Checklist"** (part B of this document). The 'checklist' records the various significant (high risk) hazards identified by the designer(s) and, where they have been able, details of how they have been eliminated.

It is recognised that not every hazard can be 'designed out' and therefore the checklist will also be used to record the residual risks of which the designer(s) are aware.

The checklist provides an audit trail of the design process and may also be used as evidence in the event that a designer is required to defend his or her actions in any HSE investigation.

Copies of parts A and B should be passed to all members of the project team, especially the Principal Designer. Reference must also be made to GG104 Requirements for safety risk assessment.

### Part A: Designer's Hazard Checklist

<b>Project Title:</b>	570131D Priority VRS VM Development Batch 1 622 Site 19 – M5 J22-23 SB MP 183.493 – 184.57 VRS	<b>Kier Highways Job No.:</b>	1040304
<b>Project Description:</b>	<p>Survey works in connection with the preparation of a design for a vehicle restraint system (VRS) replacement scheme within the southbound verge of the M5 between junctions 22 and 23.</p> <p>The survey works to be undertaken are as follows:</p> <ul style="list-style-type: none"> <li>• a topographical survey of the hardshoulder and verge</li> <li>• trial holes to investigate the ground conditions, to locate statutory undertakers and other services, and to locate bridge foundations</li> <li>• Drainage survey, including manhole surveys and CCTV surveys of pipework</li> <li>• Asbestos refurbishment survey</li> </ul>		
<b>Design Discipline:</b>	Highways – Renewal of Roads		
<b>Project Type as determined by GG104 (if applicable)</b>	A	<b>Prepared By:</b>	██████████

### Notes:

1. This section of the document includes a list of potential hazards pertaining to a wide range of situations which may occur across Kier Highways' activities. *Where particular categories do not ordinarily affect the scheme, **Part A should be edited/sections deleted to more accurately reflect the work carried out.***
2. An individual item or a whole section (by ticking the heading) can be noted as not applicable showing you have considered the hazard area and judged it to be not applicable.
3. The list of potential hazards is not exhaustive, and all sections can be added to, or additional sections added, as required. Reference to the Approved Code of Practice may be helpful.
4. All items considered by the designer as having a potential high risk must be addressed on the 'Hazard Elimination Management Schedule'. Low risk activities can also be included if considered appropriate.
5. Consideration must be given to all populations that may be affected as follows -

<b>Population 1</b> – People directly employed by the Client and who work on the site e.g. Traffic Officers.	<b>'Workers'</b>
<b>Population 2</b> – People in a contractual relationship with the client.	
<b>Population 3</b> – Other parties, including road users, the police and emergency services and non-motorised 'Users' such as equestrians, cyclists and pedestrians, as well as those others not in a contractual relationship with the client, such as privately contracted vehicle recovery and vehicle repair providers.	<b>'Users'</b>
<b>Population 4</b> – Third parties includes any person or persons who could be affected by the works, but who are neither using it, nor working on it, i.e. living or working adjacent to the site.	<b>'Other Parties'</b>

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
<b>1.</b>	<b>Existing Environment</b>				
1.1	Existing buildings	X			
1.2	Previous/existing land/ structures	X			
1.3	Roadways			X	
1.4	Railways	X			
1.5	Water course	X			
1.6	Ground conditions:	X			Trial holes are being dug to establish the existing ground conditions & for soil sampling. No hazards are anticipated.
	• Contamination	X			
	• Ground water	X			
	• Instability	X			
	• Mineral / mine workings	X			
1.7	Access restrictions			X	
1.8	Adjacent properties	X			
1.9	Concurrent site activities	X			
1.10	Interface with the public			X	
1.11	Occupied premises	X			
1.12	Structural instability	X			
1.13	Fragile materials	X			
1.14	Hazardous materials	X			
1.15	Land use	X			
1.16	Traffic			X	
1.17	Asbestos		X		An Asbestos refurbishment survey is due to be undertaken as part of these works.
<b>2.</b>	<b>Existing Services</b>				Trial holes are to be dug with handheld equipment.
2.1	Underground				
	• Electrical	X			
	• Gas	X			
	• Water			X	
	• Telecommunications			X	
	• Motorway communication services			X	
2.2	Overhead Services				
	• Electrical			X	
	• Telecommunications	X			
	• Others (insert as necessary)	X			

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
<b>3.</b>	<b>Earthworks</b>	<b>X</b>			
3.1	Deep excavations				
3.2	Slope / ground stability				
3.3	Ground water / water courses				
3.4	Plant movements				
3.5	Interface with services (refer 2)				
3.6	Contamination (ground / water) (refer 1.6)				
3.7	Adjacent structures (refer 1.8)				
3.8	Others (insert as necessary)				
<b>4.</b>	<b>Foundations</b>	<b>X</b>			
4.1	Adjacent buildings/structures				
4.2	Deep excavations				
4.3	Plant movements				
4.4	Interface with services				
4.5	Contamination (ground / water)				
4.6	Ground water				
4.7	Confined spaces				
4.8	Piling:				
	• Noise				
	• Vibration				
	• Contamination				
	• Plant				
4.9	Grouting:				
	• Drilling work				
	• Dust				
	• Pollution				
4.10	Stability of structure				
4.11	Others (insert as necessary)				
<b>5.</b>	<b>Services Installation</b>	<b>X</b>			
5.1	Excavations				
5.2	Ground water				
5.3	Ground conditions				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
5.4	Existing services				
5.5	Testing operations				
5.6	Lifting operations				
5.7	Adjacent structures / activities				
5.8	Maintenance				
5.9	Contamination				
5.10	Others (insert as necessary)				
<b>6.</b>	<b>Drainage Works</b>				
6.1	Excavations				
6.2	Ground water				
6.3	Ground conditions				
6.4	Confined spaces			✓	Drainage survey works will be taking place including manhole and pipework CCTV surveys.
6.5	Leptospirosis / Weils disease			✓	Drainage survey works will be taking place including manhole and pipework CCTV surveys. Contractor to ensure sufficient welfare facilities are in place at all times. All appropriate PPE must be worn at all times.
6.6	Existing services (asbestos pipes?)	✓			
6.7	Manual handling	✓			
6.8	Lifting operations		✓		Drainage survey works will be taking place including manhole and pipework CCTV surveys.
6.9	Maintenance	✓			
6.10	Sewage	✓			
6.11	Traffic			✓	Live traffic present on M5 during TM setup / removal and during the works under traffic management with a restricted speed limit.
6.12	Contamination (ground / water)		✓		Contractor to ensure sufficient welfare facilities are in place at all times. All appropriate PPE must be worn at all times.

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
6.13	Hepatitis B / Tetanus		✓		Contractor to ensure sufficient welfare facilities are in place at all times. All appropriate PPE must be worn at all times.
6.14	Lighting			✓	Survey works are to be completed at night, leading to increased risk of slips, trips and falls. Contractor to ensure adequate lighting is provided for safety of operations.
7.	<b>Highways</b>				
7.1	Traffic management			✓	Temporary traffic management will be required to part close the M5 in both directions within the scheme extents and to prevent unauthorised access.
7.2	Adjacent traffic			✓	Live traffic present on M5 during TM setup / removal and during the works under traffic management with a restricted speed limit.
7.3	Construction materials		✓		Access to the site will be provided within the TM setup for all deliveries / waste removal. All materials to be installed and handled by competently trained operatives only. Refer to Control of Substances Hazardous to Health (COSHH) assessments.
7.4	Structural works	✓			
7.5	Adjacent structures			✓	Location of overbridges are highlighted on the construction drawings. Refer to Appendix C in PCI for details.
7.6	Noise		✓		All site operatives to be provided with suitable and sufficient PPE and appropriate control measures are to be adopted to minimise duration of exposure to upper noise limits.
7.7	Vibration		✓		Suitable control measures are to be



Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
					adopted to avoid Hand Arm Vibration (HAV) or reduce the duration of exposure.
7.8	Coal Tar in pavement		✓		Pavement investigations including trial holes and cores will be undertaken across the scheme extents, which will be subject to PAK testing to determine whether TBM's are present.
7.9	Night work			✓	Works are to be completed at night leading to increased risks of slips, trips and falls. Task lighting to be provided by Contractors as appropriate.
<b>8.</b>	<b>Steelwork Construction</b>	<b>X</b>			
8.1	Working at height				
8.2	Lifting operations				
8.3	Temporary stability				
8.4	Connections				
8.5	Unusual sequence				
8.6	Materials, e.g. paints				
8.7	Consideration of future maintenance				
8.8	Others (insert as necessary)				
<b>9.</b>	<b>Concrete Construction</b>	<b>X</b>			
9.1	Working at height				
9.2	Plant restrictions				
9.3	Lifting operations				
9.4	Noise				
9.5	Vibration				
9.6	Temporary instability				
9.7	Pre/post tensioning				
9.8	Materials				
9.9	Maintenance				
9.10	Joints (scabbling should not be undertaken)				
9.11	Others (insert as necessary)				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
<b>10.</b>	<b>Masonry Construction</b>	<b>X</b>			
10.1	Manual handling				
10.2	Lifting operations				
10.3	Materials				
10.4	Temporary stability				
10.5	Working at height				
10.6	Dust				
10.7	Durability				
10.8	Catastrophic collapse				
10.9	Others (insert as necessary)				
<b>11.</b>	<b>Timber Construction</b>	<b>X</b>			
11.1	Materials				
11.2	Working at height				
11.3	Temporary stability				
11.4	Lifting operations				
11.5	Manual handling				
11.6	Fire				
11.7	Dust				
11.8	Others (insert as necessary)				
<b>12.</b>	<b>Cladding</b>	<b>X</b>			
12.1	Lifting operations				
12.2	Manual handling				
12.3	Maintenance / cleaning				
12.4	Others (insert as necessary)				
<b>13.</b>	<b>Glazing</b>	<b>X</b>			
13.1	Manual handling				
13.2	Lifting operations				
13.3	Cleaning / maintenance				
13.4	Others (insert as necessary)				
<b>14.</b>	<b>Mechanical/Electrical Systems</b>	<b>X</b>			
14.1	Access				
14.2	Existing services (asbestos?)				
14.3	Manual handling				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
14.4	Materials / substances				
14.5	Confined spaces				
14.6	Pressure systems				
14.7	Testing operations				
14.8	Fixings				
14.9	Working at height				
14.10	Maintenance				
14.11	Others (insert as necessary)				
<b>15.</b>	<b>Railway Activities</b>	<b>X</b>			
15.1	Train movements				
15.2	Overhead lines				
15.3	Electrified track				
15.4	Underground services				
15.5	Adjacent structures				
15.6	Ground stability				
15.7	Contamination				
15.8	Others (insert as necessary)				
<b>16.</b>	<b>Demolition of Existing Structures</b>	<b>X</b>			
16.1	Services				
16.2	Adjacent / adjoining structures				
16.3	Materials:				
	<ul style="list-style-type: none"> <li>Hazardous i.e. asbestos in permanent shuttering, waterproofing to bridge decks, joints etc.</li> </ul>				
	<ul style="list-style-type: none"> <li>fragile</li> </ul>				
16.4	Working at height				
16.5	Temporary stability				
16.6	Pre/post tensioning				
16.7	Noise				
16.8	Vibration				
16.9	Dust				
16.10	Effect on usage of demolition materials				
16.11	Others (insert as necessary)				
<b>17.</b>	<b>Future Demolition / decommissioning of new structure/installation</b>	<b>X</b>			
17.1	Unusual sequence				
17.2	Pre/post tensioned element				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
17.3	Materials				
17.4	Adjacent/adjoining structure				
17.5	Temporary stability				
17.6	Contamination during usage of demolition material.				
17.7	Others (insert as necessary)				
<b>18.</b>	<b>Maintenance and Operation of Facility / Structure etc.</b>	<b>X</b>			
18.1	Access				
18.2	Safety equipment				
18.3	Testing / inspection				
18.4	Procedure				
18.5	Contamination during usage of demolition material.				
18.6	Others (insert as necessary)				
<b>19.</b>	<b>Use of the structure as a workplace</b>				
19.1	Does the proposed use of the structure / premises include the intention for it to be made available to any person as a place of work	<b>NO</b>			
19.2	If yes; the design and materials used must take in to account the provisions of the Workplace (Health, Safety and Welfare) Regulations 1992				

## Part B: Hazard Elimination Checklist

<b>Project Title:</b>	570131D Priority VRS VM Development Batch 1 622 Site 19 – M5 J22-23 SB MP 183.493 – 184.57 VRS			<b>Kier Highways Job No.:</b>	1040304
<b>Project Description:</b>	<p>Survey works in connection with the preparation of a design for a vehicle restraint system (VRS) replacement scheme within the southbound verge of the M5 between junctions 22 and 23.</p> <p>The survey works to be undertaken are as follows:</p> <ul style="list-style-type: none"> <li>- a topographical survey of the hardshoulder and verge</li> <li>- trials holes to investigate the ground conditions, to locate statutory undertakers and other services, and to locate bridge foundations</li> <li>- Drainage survey, including manhole surveys and CCTV surveys of pipework</li> <li>- Asbestos refurbishment survey</li> </ul>				
<b>Design Discipline:</b>	Highways – Renewal of Roads	<b>Prepared By:</b>	██████████	<b>Checked By:</b>	██████████

**Note: If GG104 applies to your contract, the checklist must be approved by an appropriate person: For a Type A project the Scheme PD must approve, for a Type B projects the Senior Manager must approve and for a Type C project the Kier Highways Service Director must approve.**

Reviewed and approved by:

<b>Name</b>	
<b>Signature</b>	
<b>Position</b>	

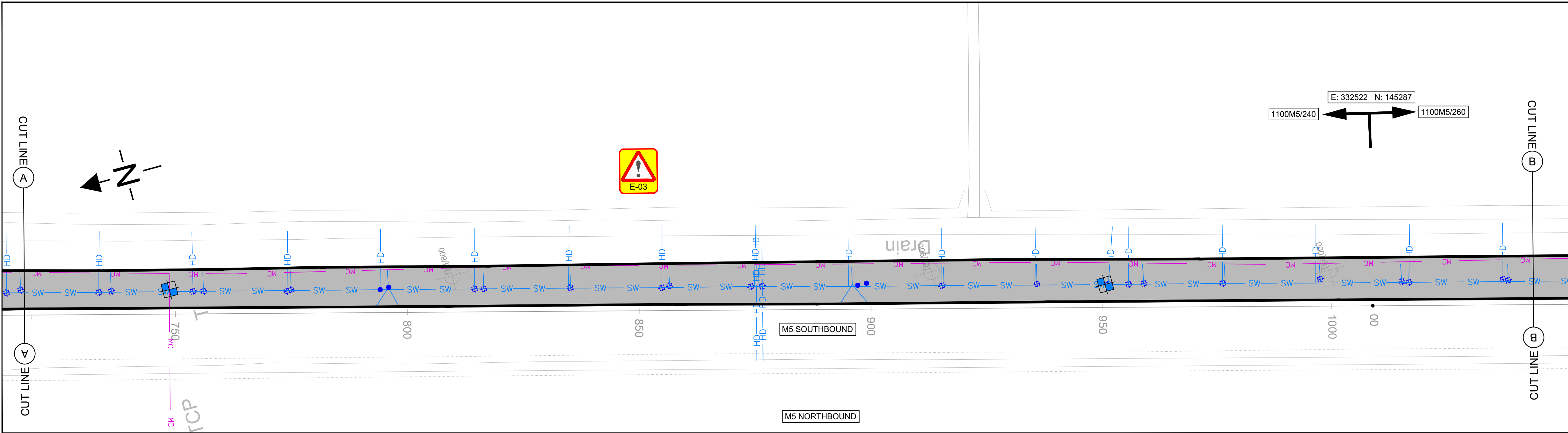
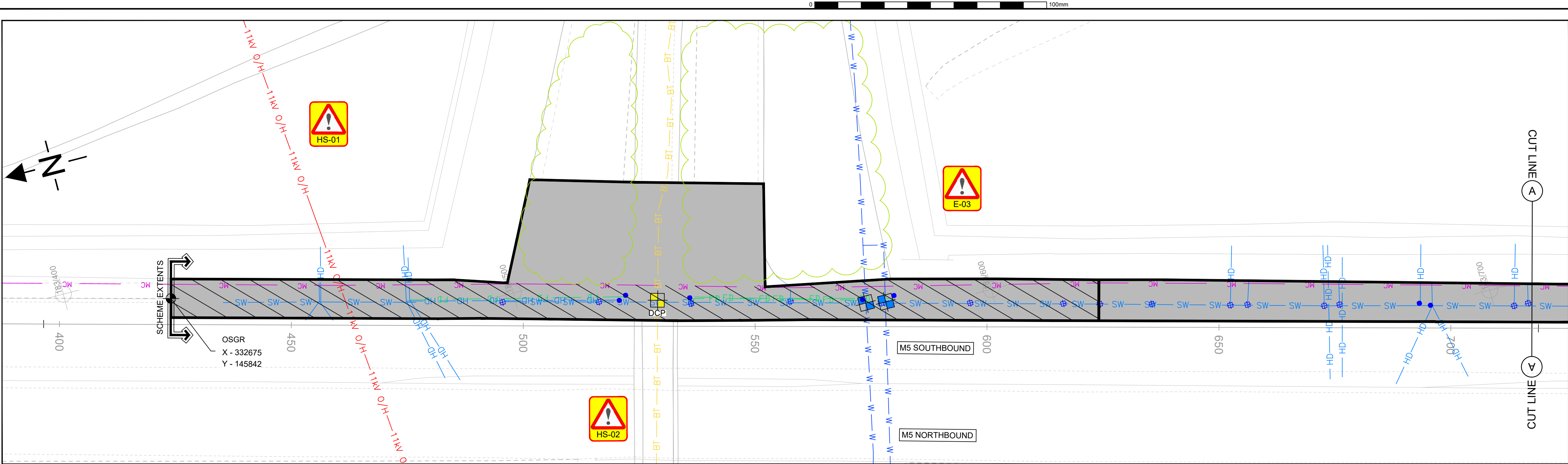
* Persons at Risk: (1) Workers	(2) Users	(3) Other parties
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<b>**</b>	<b>Action by:</b>	<b>Principal Designer</b>	<b>– Include within the H&amp;S file</b>
		<b>Designer</b>	<b>– include in the pre-construction information</b>
		<b>Principal Contractor</b>	<b>– manage risk during the construction phase</b>
		<b>Other designer</b>	<b>– take into consideration when preparing their designs</b>
		<b>Client</b>	<b>– pass information to designers / Principal designer</b>

Ref.	Activity	Hazard	Persons at Risk *	Design Measures taken, or being taken to eliminate or reduce the hazard	Information on the Residual Risk	Principal Designer Review	Action Req'd by: **
1.3, 1.7, 1.10, 1.16, 7.1 & 7.2.	Works in general.	Coming into contact with live traffic or encountering members of the public (motorists).	(1) and (2)	The Client (Highways England) have elected to be responsible for and to arrange for the provision of the temporary traffic management (which will be hardshoulder and lane 1 closures). This will be provided overnight from 2200 to 0600.	The risk remains but the likelihood has been reduced.	No further comment.	Client and Principal Contractor
1.18	Asbestos	Exposure to ACMs	1	A type 2 Asbestos management survey is due to be undertaken as part of these works.  Suitable PPE is to be worn at all times.	A residual risk remains and shall be conveyed to contractor(s) via the construction drawings and design information pack	No further comment.	PC
2.1	Excavation of trial holes.	Coming into contact with underground services.	(1)	Statutory undertakers drawings have been obtained and the routes of these and other services have been shown on the scheme statutory undertakers and other service drawings (nos. HE570131D-KIER-HGN-M5_J22_J23_ML_A-DR-CH-010004 and 010005). These are also shown on the trial hole location drawings (nos. HE570131D-KIER-VGN-M5_J22_J23_ML_A-DR-CH-010001 and 010002). The Client will arrange for the NRTS communication services to be marked out on site.	The risk remains but the likelihood has been reduced and will need to be managed by the Principal Contractor. Identification and control methods outlined in HSG47 'Avoiding Danger from Underground Services' should be followed.	No further comment.	Principal Contractor and Client
2.2	Works in general.	Coming into contact with overhead services.	(1)	There are two overhead service (electricity) crossings within or close to the works area. The location of these have been indicated on the scheme drawings.	The risk remains but the likelihood has been reduced and will need to be managed by the Principal Contractor. Identification and control methods outlined in GS6 'Avoiding Danger from Overhead Power Lines' should be followed.	No further comment.	Principal Contractor
6.5	Leptosirosis / Weils Disease	Workers exposed to Leptosirosis / Weils Disease during drainage survey works.	1	Suitable PPE is to be worn at all times.	A residual risk remains and shall be conveyed to contractor(s) via the construction drawings and design information pack	No further comment.	PC

Ref.	Activity	Hazard	Persons at Risk *	Design Measures taken, or being taken to eliminate or reduce the hazard	Information on the Residual Risk	Principal Designer Review	Action Req'd by: **
6.4	Confined spaces	Working in confined spaces during drainage survey works.	1	Suitable PPE is to be worn at all times. Contractor to look into possibility of avoiding the need for workers to enter into confined spacing in order to carry out the survey works. However if the works in confined spaced cannot be avoided then a risk assessment shall be carried out to ensure a safe system of working.	A residual risk remains and shall be conveyed to contractor(s) via the construction drawings and design information pack	No further comment.	PC
7.5	Works in general.	Striking overhead structures.	(1), (2) and (3)	There are two overbridges within or close to the works area. These have been indicated on the scheme drawings.	The risk remains but the likelihood has been reduced. The Principal Contractor should manage this risk (possibly as part of the traffic management arrangements).	No further comment.	Principal Contractor (and possibly Client)
N/A	All activities	Covid 19	All	Contractors RAMS to incorporate government guidance on social/physical distancing	Risk remains however likelihood reduced	No further comment.	Principal Contractor & Contractors





- KEY**
- EXISTING MANHOLE
  - EXISTING GULLY
  - TRIAL HOLE SURVEY (STRUCTURES) & SOIL SAMPLING (1No)
  - TRIAL HOLE SURVEY (STATS DEPTHS), SOIL SAMPLING (9No)
  - DCP DCP TESTING REQUIRED AT SAMPLE
  - SURVEY AREA (TOPOGRAPHICAL SURVEY) (10,992m²)
  - SURVEY AREA (DRAINAGE AND ASBESTOS REFURBISHMENT SURVEY) (SEE NOTE 8)
  - APPROXIMATE AREAS OF DENSE TREES (3346m²) (SEE NOTE 7)
  - BT BT EXISTING BT UNDERGROUND CABLE
  - W W EXISTING WATER MAIN
  - HD HD EXISTING HIGHWAY DRAIN
  - SW SW EXISTING SURFACE WATER DRAIN
  - FD EXISTING FILTER DRAIN
  - 11kV O/H EXISTING 11KV OVERHEAD ELECTRIC CABLE
  - MC EXISTING MOTORWAY COMMUNICATIONS CABLE

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**RESIDUAL DESIGN HAZARDS**

THE FOLLOWING HAS BEEN COLLECTED FROM THE PRE-CONSTRUCTION INFORMATION AND HIGHLIGHTS KNOWN RESIDUAL HAZARDS.

**KEY**

HS-# = HEALTH AND SAFETY RISK REFERENCE NUMBER  
E-# = ENVIRONMENT RISK REFERENCE NUMBER

HS-01 - EXISTING OVERHEAD ELECTRICITY CABLES  
HS-02 - EXISTING OVERHEAD STRUCTURES  
E-03 - DITCHES/WATERCOURSE

- NOTES**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS WITHIN THE SERIES.
  - INDICATIVE LOCATIONS OF STATUTORY UNDERTAKERS SERVICES HAVE BEEN PROVIDED ON THIS DRAWING FOR TRIAL HOLE SURVEY PURPOSES. DETAILS OF STATUTORY UNDERTAKERS SERVICES ARE SHOWN ON DRAWING NOS. HE570131D-KIER-HGN-M5\_J22\_J23\_ML\_A-DR-CH-010004 AND 010005. NO GUARANTEE IS GIVEN TO ITS ACCURACY. FOR CONSTRUCTION PURPOSES REFER TO STATUTORY UNDERTAKERS PLANS IN THE DESIGN INFORMATION PACK.
  - MARKER POSTS ARE SHOWN FOR INDICATIVE PURPOSE ONLY. CHAINAGES SHOWN ON THIS DRAWING HAVE BEEN SET OUT AT LEAST EVERY 50m ALONG THE CHART SECTIONS INDICATED THROUGHOUT THE EXTENTS OF THE WORKS.
  - THE OVERHEAD CABLES HAVE BEEN IDENTIFIED ON THE SCHEME DRAWINGS, HOWEVER INFORMATION REGARDING SAFE WORKING HEIGHTS IN ACCORDANCE WITH GS6 HAS NOT BEEN INDICATED. PRIOR TO THE COMMENCEMENT OF WORKS ON SITE, OVERHEAD CABLE HEIGHTS TO BE CONFIRMED AND RECORDED BY WAY OF SIGNATURE AND DATE BY A TRAINED AND COMPETENT PERSON.
  - TRIAL HOLES LOCATED AT STRUCTURES ARE TO DETERMINE THE DEPTH OF BRIDGE PIER FOUNDATIONS AND OFFSET OF FOUNDATION EDGE FROM THE FACE OF THE BRIDGE PIER.
  - THE TOPOGRAPHICAL SURVEY IS TO EXTEND FROM THE TRAFFIC SIDE OF THE HARD SHOULDER / LANE 1 DIVIDING (RAISED RIB) LINE TO THE HIGHWAY BOUNDARY UNLESS OTHERWISE STATED.
  - FOR THE TOPOGRAPHICAL SURVEY FOR DENSE AREAS OF TREES IT IS ONLY NECESSARY TO SURVEY THE TRUNKS (AT A HEIGHT OF 0.3m ABOVE GROUND LEVEL) AT THE PERIMETER OF THESE AREAS. THE APPROXIMATE AREAS HAVE BEEN INDICATED ON THE DRAWINGS BUT SHOULD BE ACCURATELY ESTABLISHED ON SITE DURING THE TOPOGRAPHICAL SURVEY.
  - DRAINAGE CONNECTIVITY SURVEY IS FOR ALL DRAINAGE ASSETS IN A DRAINAGE SYSTEM, WHICH MAY ALSO INCLUDE DRAINAGE INFRASTRUCTURE OUTSIDE OF THE SURVEY AREA E.G. OUTFALLS.

C3	TOPOGRAPHICAL AREA EXTENDED AT OVERBRIDGE CH.525.	LP	PPP	08/06/2021
C2	VEHICLE RESTRAINT SYSTEM INSPECTION REQUIREMENT REMOVED.	LAH	SR	03.02.2021
C1	FIRST ISSUE	LAH	SR	20.01.2021
REV	DETAILS	CHKD	APPD	DATE

DRAWN : MK	DRAWING STATUS
DESIGN : MK	WORK IN PROGRESS
CHKD : LP	PRELIMINARY DRAWING
APPD : PPP	EXTERNAL ISSUE
DATE : 08/06/2021	AS-BUILT
SUITABILITY : S2	FOR INFORMATION

CLIENT

**highways**  
england

AGENT

**KIER**

SCHEME NAME

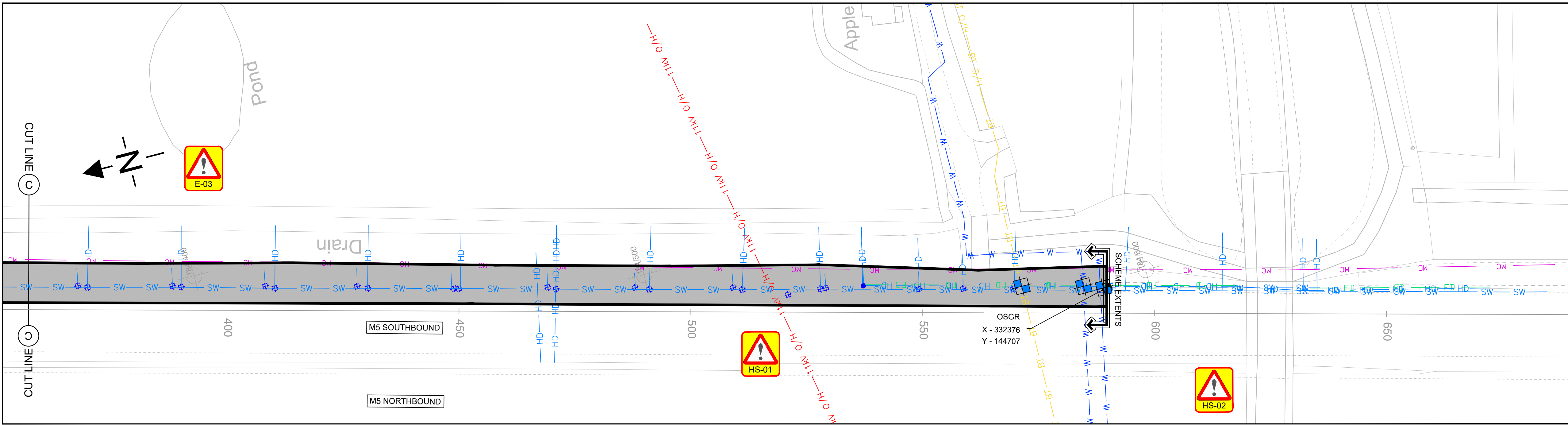
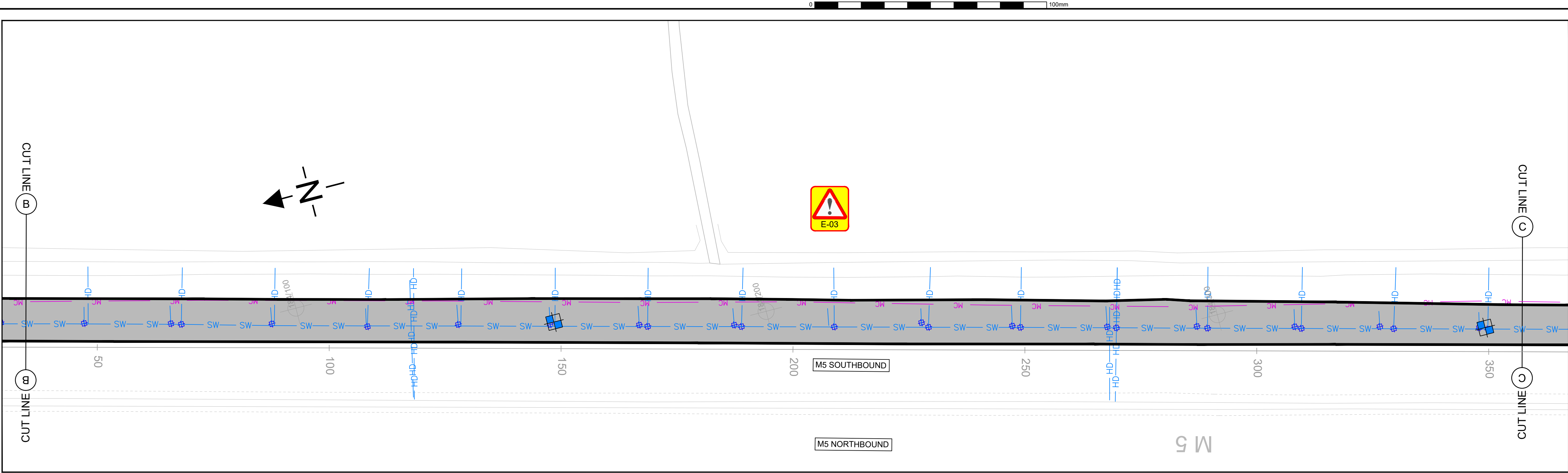
**570131 PRIORITY VRS VM DEVELOPMENT BATCH 1**

DRAWING TITLE

**622 SITE 19 - M5 J22-J23 SOUTHBOUND VERGE MP183.5 - 184.6 SURVEY LOCATION PLAN SHEET 1 OF 2**

ORIG DRAWING SIZE : A1	DIMENSIONS : m
COPYRIGHT © KIER	SCALE : 1:500
DRAWING NUMBER	SCHEME REFERENCE No.
PROJECT   ORIGINATOR   VOLUME	1040304
HE570131D - KIER - VGN	
M5_J22_J23_ML_A - DR - CH - 010001	REVISION
LOCATION   TYPE   ROLE   NUMBER	C 3





KEY

- EXISTING MANHOLE
- EXISTING GULLY
- TRIAL HOLE SURVEY (STRUCTURES) & SOIL SAMPLING (1No)
- TRIAL HOLE SURVEY (STATS DEPTHS), SOIL SAMPLING (9No)
- DCP TESTING REQUIRED AT SAMPLE
- SURVEY AREA (TOPOGRAPHICAL SURVEY) (10,992m<sup>2</sup>)
- BT - BT - EXISTING BT UNDERGROUND CABLE
- W - W - EXISTING WATER MAIN
- HD - HD - EXISTING HIGHWAY DRAIN
- SW - SW - EXISTING SURFACE WATER DRAIN
- FD - FD - EXISTING FILTER DRAIN
- 11kV O/H - 11kV O/H - EXISTING 11KV OVERHEAD ELECTRIC CABLE
- MC - MC - EXISTING MOTORWAY COMMUNICATIONS CABLE

THIS MAP IS REPRODUCED FROM ORDNANCE SURVEY MATERIAL WITH THE PERMISSION OF ORDNANCE SURVEY ON BEHALF OF THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE © CROWN COPYRIGHT. UNAUTHORISED REPRODUCTION INFRINGES CROWN COPYRIGHT AND MAY LEAD TO PROSECUTION OR CIVIL PROCEEDINGS. AL 100030649 2021

RESIDUAL DESIGN HAZARDS

THE FOLLOWING HAS BEEN COLLECTED FROM THE PRE-CONSTRUCTION INFORMATION AND HIGHLIGHTS KNOWN RESIDUAL HAZARDS.

KEY  
HS-# = HEALTH AND SAFETY RISK REFERENCE NUMBER  
E-# = ENVIRONMENT RISK REFERENCE NUMBER

HS-01 - EXISTING OVERHEAD ELECTRICITY CABLES  
HS-02 - EXISTING OVERHEAD STRUCTURES  
E-03 - DITCHES/WATERCOURSE

NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS WITHIN THE SERIES.
- INDICATIVE LOCATIONS OF STATUTORY UNDERTAKERS SERVICES HAVE BEEN PROVIDED ON THIS DRAWING FOR TRIAL HOLE SURVEY PURPOSES. DETAILS OF STATUTORY UNDERTAKERS SERVICES ARE SHOWN ON DRAWING NOS. HE570131D-KIER-HGN-M5\_J22\_J23\_ML\_A-DR-CH-010004 AND 010005. NO GUARANTEE IS GIVEN TO ITS ACCURACY. FOR CONSTRUCTION PURPOSES REFER TO STATUTORY UNDERTAKERS PLANS IN THE DESIGN INFORMATION PACK.
- MARKER POSTS ARE SHOWN FOR INDICATIVE PURPOSE ONLY. CHAINAGES SHOWN ON THIS DRAWING HAVE BEEN SET OUT AT LEAST EVERY 50m ALONG THE CHART SECTIONS INDICATED THROUGHOUT THE EXTENTS OF THE WORKS.
- THE OVERHEAD CABLES HAVE BEEN IDENTIFIED ON THE SCHEME DRAWINGS, HOWEVER INFORMATION REGARDING SAFE WORKING HEIGHTS IN ACCORDANCE WITH GS6 HAS NOT BEEN INDICATED. PRIOR TO THE COMMENCEMENT OF WORKS ON SITE, OVERHEAD CABLE HEIGHTS TO BE CONFIRMED AND RECORDED BY WAY OF SIGNATURE AND DATE BY A TRAINED AND COMPETENT PERSON.
- TRIAL HOLES LOCATED AT STRUCTURES ARE TO DETERMINE THE DEPTH OF BRIDGE PIER FOUNDATIONS AND OFFSET OF FOUNDATION EDGE FROM THE FACE OF THE BRIDGE PIER.
- THE TOPOGRAPHICAL SURVEY IS TO EXTEND FROM THE TRAFFIC SIDE OF THE HARDSHOULDER / LANE 1 DIVIDING (RAISED RIB) LINE TO THE HIGHWAY BOUNDARY UNLESS OTHERWISE STATED.

C3	TOPOGRAPHICAL AREA EXTENDED AT OVERBRIDGE CH.525.	LP	PPP	08/06/2021
C2	VEHICLE RESTRAINT SYSTEM INSPECTION REQUIREMENT REMOVED.	LAH	SR	03.02.2021
C1	FIRST ISSUE	LAH	SR	20.01.2021
REV	DETAILS	CHKD	APPD	DATE

DRAWN : MK	DRAWING STATUS
DESIGN : MK	WORK IN PROGRESS
CHKD : LP	PRELIMINARY DRAWING
APPD : PPP	EXTERNAL ISSUE
DATE : 08/06/2021	AS-BUILT
SUITABILITY : S2	FOR INFORMATION

CLIENT



AGENT



SCHEME NAME

570131 PRIORITY VRS VM  
DEVELOPMENT BATCH 1

DRAWING TITLE

622 SITE 19 - M5 J22-J23  
SOUTHBOUND VERGE  
MP183.59 - 184.67  
SURVEY LOCATION PLAN  
SHEET 2 OF 2

ORIG DRAWING SIZE : A1	DIMENSIONS : m	SCHEME REFERENCE No.
COPYRIGHT © KIER	SCALE : 1:500	1040304
DRAWING NUMBER	PROJECT   ORIGINATOR   VOLUME	REVISION
HE570131D - KIER - VGN	M5_J22_J23_ML_A - DR - CH - 010002	C 3
LOCATION   TYPE   ROLE   NUMBER		

**Kier Highways Project No: 570131D**

**Client Reference No: 570131D**

**570131D Priority VRS VM Development Batch 1**

**Site 5 – M5 J24-25 BD MP 192.4 – 193.6 VRS**

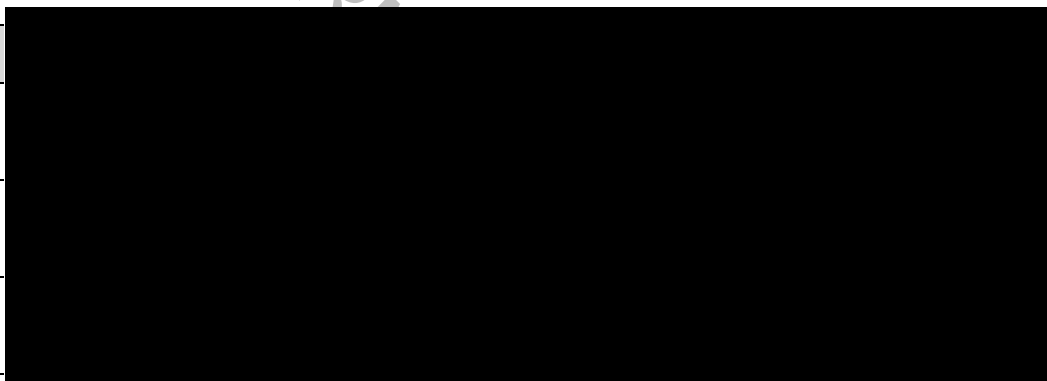
**Pre-Construction Information**

	Yes	No
Are Works to be carried out under the Commission / Contract Health and Safety Plan?		X
Is the Scheme notifiable under the CDM Regulations 2015?		
1. Last longer than 30 working days and have more than 20 workers simultaneously at any point in the project;	X	
2. Exceed 500 person days	X	

<b>Project type as categorised by GG104</b>	<b>A</b>
<p>* If applicable GG104 will determine the Kier Highways minimum Scheme Principal Designer (Scheme PD) level. Refer to SHEMS-FOR-HIG-S-055 for GG104 type categorisation and minimum Scheme PD level.</p> <p>Type A projects the Design Team Lead, Type B projects the Senior Manager, Type C projects the Service Director.</p>	

This document has been produced in accordance with the recommendations and requirements of the Construction (Design and Management) Regulations 2015.

Prepared by: Designer
Reviewed by; Design Team Lead
Accepted by: Scheme PD



'Reviewed by' & 'Accepted by' can be the same person for GG104 type A projects (where the Design Team Lead is the Scheme PD)



Authorised By: [Redacted]	Page 1 of 12	SHEMS-FOR-HIG-051
Author: Highways CDM Team	Date: October 2019	Version: 1.0
As part of our system review, this document is valid until April 2021		



Site Specific Hazards Identified in Design		
<p><b><i>ONLY include significant and unusual hazards that a competent contractor would need to know, could not reasonably foresee, or are likely to be difficult to manage effectively.</i></b></p> <p><b>Note – Consideration to be given to all ‘populations’ affected, Workers, Users, Other Parties.</b></p>		
Activity	Residual Hazard	Comments
Trial Hole / Core Survey Works	Conflict / risk of striking with STATS equipment. Working adjacent to live Services.	Indicative location of Statutory Undertakers Services (C2 Information) are shown on the Proposed Survey drawings for information only. No guarantee is given for its accuracy. Contractor should refer to Statutory Undertakers plans in the design information pack and undertake investigations prior to start of works to satisfy themselves of the location of services.
Traffic Management	Overhead Electric Cables	There are overhead electric cables present within the area of the works. Location of overhead services are shown on the statutory undertakers and survey drawings. Refer to Appendix E for more details.
Night time working	Poor illumination of work area. Reduced visibility of hazards and site operatives.	Adequate lighting for night time working to be provided by the contractor. Banksman should be present to ensure safe movement of plant within the works.
Drainage / manhole surveys	Working in confined spaces	Suitable PPE is to be worn at all times. Contractor to look into possibility of avoiding the need for workers to enter into confined spacing in order to carry out the survey works. However if the works in confined spaced cannot be avoided then a risk assessment shall be carried out to ensure a safe system of working.

1 Project Description					
<b>Scope of Works</b>					
<p>This PCI is specifically prepared for the proposed survey works within the central reserve, including lane 3 in both directions of the M5 within the site extents. The survey works will include;</p> <ul style="list-style-type: none"> <li>- Topographical Survey</li> <li>- Drainage surveys including manholes surveys and CCTV surveys of pipework.</li> <li>- Trial Holes</li> <li>- Pavement Core</li> <li>- Asbestos refurbishment survey</li> </ul> <p>Refer to survey drawings; HE570131D-KIER-VGN-M5_J23-24_CR-DR-CH-010001 to 010002</p> <p>This scheme stretches across the following chart sections;</p> <ul style="list-style-type: none"> <li>- 1100M5/360 Ch373m – Ch1001m (628m)</li> <li>- 1100M5/370 Ch0m – Ch628m</li> </ul>					
<b>Location</b>					
<p>See Location Plan listed in current Document Issue Sheet or Appendix A. Drawing no. HE570131D-KIER-HGN-M5_J23-24_CR-DR-CH-000001.</p>					
Site Address		M5 J23-24 CR BD MP 192.3 – 193.6 Bridgewater, Somerset			
<b>Site Photographs</b>					
N/A					
<b>OSGR, MP or</b>	From	332356, 137237		To	331925, 136072
<b>Str Key / Name</b>	Str Key	Structure Name			
<p>Westonzoyland Road overbridge – Structure Key: 1829, Structure No. /M5//193.10// at MP: 193.10 +10m Summer Drove Footbridge - Structure Key: 1827, MP192.5+80m</p>					
<b>Traffic Management</b>					
<p><b>Traffic Management arrangements:</b>  <b>Traffic Flows:</b>            2019 (WebTris) AADT NB = 37793 (13.0%)            2019 (WebTris) AADT SB 5258/2 = 32,808 (12.4%)            2019 (WebTris) AADT SB Slip at J23 = 5016 (No Data)  <b>Speed Limits:</b> The existing speed limit within the scheme extents is National Speed Limit for Motorways (70mph).  <b>Cycle / bus Routes:</b> There are no bus or cycle routes through the works area.  <b>Traffic Management:</b> Works will be undertaken with a night time part carriageway/road closures.  <b>Emergency access:</b> Access will be required by emergency services through Traffic Management at all times.</p>					
Anticipated Working Hours, subject to Traffic Counts				TBC	
<b>Mobilisation Period</b>	TBC	Anticipated Start Date	TBC	Anticipated End Date	TBC





3. Scheme Specific Requirements			
	Yes	No	Comments
A pre-start meeting will be mandatory			
Does an H&S file exist?		✓	
Site Welfare	✓		Site Welfare provisions to be provided.
Security / Segregation		✓	The Principal Contractor shall provide adequate security to the site.
Are there any other projects taking place in the vicinity?		✓	
Are there any restrictions on vehicle movements?	✓		All site vehicles (incl. delivery vehicles) must abide by the TM requirements and regulations 1. enter and exit site from the dedicated points; 2. Comply with the designated site safety speed limits; All vehicles within Traffic Management shall comply with the conspicuity requirements of Chapter 8.
Are there any restrictions on deliveries, waste collection, or storage?	✓		No deliveries to take place unless Traffic Management is in place. No waste shall be stored on site. Waste Carriers Licence required
Are there any parking restrictions?	✓		All vehicles and plant within the works area shall be parked in a safe area clear of access and egress points. All vehicles and plant shall be removed from the carriageway prior to removal of traffic management. No Private vehicles are allowed on site
Height Restrictions	✓		There are overhead electric services and 1no overbridges within the works area. Refer to Appendix C for more details.
Overhead Cables	✓		There are overhead electric services within the works area. Refer to Appendix C for more details.
Structures	✓		- Westonzoyland Road overbridge – Structure Key: 1829, Structure No. /M5//193.10// at MP: 193.10 +10m - Summer Drove Footbridge - Structure Key: 1827, MP192.5+80m
Will fire precautions be required?	✓		Suitable fire precautions shall be in place and in accordance with the Contractors hot works permit.
Are emergency procedures and means of escape required?	✓		The Contractor shall ensure that emergency procedure plans are in place, all staff has been inducted, and access for emergency vehicles to be maintained at all times. The nearest A&E hospital is; Musgrove Park Hospital Parkfield Drive Taunton Somerset TA1 5DA Tel: 01823 333 444 24hr A&E Service

3. Scheme Specific Requirements			
	Yes	No	Comments
Are there any areas in or around the site classified as no-go areas?	✓		No site personnel shall enter the safety zones or tapers within the extents of the traffic management unless trained and competent for installation/removal/maintenance of TM. Sub-Contractor's Method Statements and Risk Statements shall contain suitable risk control to protect pedestrian workers and plant operators.
Are there any noise restrictions?	✓		It is expected that construction noise will not significantly exceed the ambient road noise levels. Any increases in noise will be temporary and limited to the construction phase.
Are temporary works required?		✓	None
Are there any vibration restrictions?	✓		The Contractor shall comply with BS 6842:2008 Evaluations of human Exposure to Vibration in Buildings (1Hz-80Hz). Any vibration monitoring carried out shall also be in compliance with BS 6842: 2008.
Are there any poor or hazardous ground conditions		✓	None are anticipated – All works will be carried out within carriageway and central reservation area.
Are there any unstable structures?		✓	None
Are there any areas classed (existing or designed) classed as confined spaces?	✓		Drainage surveys will be taking place.
Are there any smoking restrictions?	✓		No smoking is allowed on site. Designated smoking areas to be confirmed during site inductions.
Any environmental constraints identified?		✓	None.

## Materials and Substances with Health and/or Safety Hazards

### Asbestos

The following asbestos documents have been located for this scheme;

- 020 AAP M5 J19-J24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Initial AAP – June 2008
- 109 M5 J19-J24 MP 145.20 – 196.10 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Review of AAP – December 2013
- 109 B M5 J19-J24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B Monitoring and Inspection – February 2014
- 110B M5 J19-24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Review of AAP – March 2014
- M5 J19-24 Type 2 Survey Sapling and Assessment of Type 2 Materials – April 2008

There are several electrical boxes within the extents of the northbound and southbound verges where ACM's are presumed to be present. However, these will not be affected as part of the works.

An asbestos refurbishment survey will be carried out as part of the drainage survey works to confirm whether ACM's are present.

### Lead

Scope of Works are unlikely to encounter lead.

### Tar based pavement/surfacing

Testing for tar-based materials is required as part of the survey works.

### Leptospirosis/Weil's disease / Psittacosis

The drainage contractor will come into contact with highway drainage and has the potential risk of encountering Weil's disease. The Contractor is to ensure sufficient welfare facilities are in place at all times. All appropriate PPE must be worn at all times.

Any instances of illness / sickness on site should be reported to the Site Manager/Principal Contractor Representative immediately and the persons affected should seek medical advice.

### Covid-19 pandemic

*The Contractor is to ensure they are protecting their workforce and minimising the risk of spread of infection. They must comply with the latest Government advice on working safely during coronavirus covid-19 which is currently available at <https://www.gov.uk/guidance/working-safely-during-coronavirus-covid-19/construction-and-other-outdoor-work>. Further guidance is given in the Construction Leadership Council's "Construction Sector – Site Operating Procedures". The latest version may be found at <http://cic.org.uk/important-documents.php>*

*The health and safety requirements of any construction activity must not be compromised. If an activity cannot be undertaken in line with social distancing being implemented, or by exception, safely, without risk and mitigating measures then it shall not take place.*



4. Existing Services					Refer to STATS plans listed in Appendix C
Statutory Undertaker	Not Present	Over head	Under ground	Comments	
<b>Electricity</b>					
400/132kV [pylons]	✓			OH cables (11kV) are within the scheme extents and cross the carriageway in 1No location.	
66kV	✓				
33kV			✓	UG cables (33kV) are within the scheme extents and cross the carriageway in 1No location.	
11kV		✓			
240/415Volts	✓			Refer to Statutory Undertakers Apparatus drawing no. HE570131D-KIER-HGN-M5_J23-24_CR-DR-CH-010004 to 010005	
Low Voltage	✓				
<b>Water (Foul and Potable)</b>					
Public Foul	✓			There are 2No water mains which cross the carriageway and highway drain gullies / iron work within works area.	
Pressurised Foul	✓				
Public Combined Gravity	✓				
Pressurised Combined	✓				
Culverted Watercourse	✓				
Water Main			✓		
Aqueduct	✓				
<b>Communications</b>					
Communications			✓	Refer to Motorway Communication section below.	
<b>British Telecom</b>					
British Telecom			✓	There are BT underground cables present within the works area. Refer to Statutory Undertakers Apparatus drawing no. HE570131D-KIER-HGN-M5_J23-24_CR-DR-CH-010004 to 010005	
<b>National Grid</b>					
National Grid	✓				
<b>Transco</b>					
LP Mains	✓				
MP Mains	✓				
IP Mains	✓				
LHP Mains	✓				
NHP Mains	✓				
<b>Government Pipelines</b>					
Government Pipelines	✓				
<b>Fisher German Pipelines</b>					
Fisher German Pipelines	✓				
<b>Energis</b>					
Energis	✓				
<b>Motorway Communication</b>					
Motorway Comms			✓	Loops present within works area.	
<b>Street Lighting</b>					
Street lighting	✓				

<b>4. Existing Services</b> Refer to STATS plans listed in Appendix C				
<b>Highway Drainage</b>				
			✓	Highway drain gullies / iron work within works area.
<b>Other</b>				
	✓			

FOR INFORMATION ONLY

**5. Health and Safety file requirements**

All information will be produced in an electronic format. The format of the electronic data issued is to be as follows: All documents and product data sheets are to be in PDF format, drawings are to be in PDF and AutoCAD DWG format.

The Principal Contractor shall collate all appropriate information as it becomes available, and this shall subsequently be collated in the File. The Principal Contractor is to implement an early procedure that advises contractors and materials suppliers of the detailed requirements for this record information. The health and safety file will be created and/or updated in accordance with the requirements of the IAN105/08.

FOR INFORMATION ONLY

Refer to drawing no. HE570131D-KIER-HGN-M5\_J23-24\_CR-DR-CH-000001.

## Appendix B - Construction Drawings

See Document Issue Sheet for list of current scheme drawings, alternately list below.

Reference	Rev	Title
HE570131D-KIER-VGN-M5_J23-24_CR-DR-CH-010001	P1	Site 5 M5 J23-24 Central Reservation Surveys Sheet 1 of 2
HE570131D-KIER-VGN-M5_J23-24_CR-DR-CH-010002	P1	Site 5 M5 J23-24 Central Reservation Surveys Sheet 2 of 2

## Appendix C – Existing Records and As-Built Drawings

See Document Issue Sheet for list of existing records and as-built drawings, alternately list below.

Reference	Rev	Title	Company
405/202/B05/2/5	-	Westonzoyland Road Bridge – General Arrangement	Somerset County Council
405/202/B05/12/B	-	Westonzoyland Road Overbridge – Parapets and Copings	Somerset County Council
405/202/B05/13/C	-	Westonzoyland Road Bridge – Paving and Safety Fence Details	Somerset County Council
405/202/B05/3/E	-	Westonzoyland Road Bridge – Piling Plan & Column Layout	Somerset County Council
405/202/B05/8/B	-	Westonzoyland Road Bridge – Pile Cap & Column Reinforcement	Somerset County Council

## Appendix D - Statutory Undertaker Drawings

See Document Issue Sheet for list of statutory undertaker drawings, alternately list below.

Reference	Rev	Title	Company
HE570131D-KIER-HGN-M5_J23-24_CR-DR-CH-010004	P1	Site 5 M5 J23-24 Central Reservation Statutory Undertakers Apparatus Sheet 1 of 2	All stats combined.
HE570131D-KIER-HGN-M5_J23-24_CR-DR-CH-010005	P1	Site 5 M5 J23-24 Central Reservation Statutory Undertakers Apparatus Sheet 2 of 2	All stats combined

See GS6 Measurements and Essential Safety Data and Appendix B and D for locations of overhead services.

## Appendix F - List of Structures

Structure	Type	Location Ref	Str key	OSGR
Summer Drove Footbridge	Overbridge	/M5//192.5//	1827	332325, 137031
Westonzoyland Road	Overbridge	/M5//193.10//	1829	332176, 136507

## Appendix G - Asbestos Action Plans

- 020 AAP M5 J19-J24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Initial AAP – June 2008
- 109 M5 J19-J24 MP 145.20 – 196.10 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Review of AAP – December 2013
- 109 B M5 J19-J24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B Monitoring and Inspection – February 2014
- M5 J19-24 Type 2 Survey Sapling and Assessment of Type 2 Materials – April 2008

**General Note:**

During the design stages of a project, designers are required to maintain a **"Hazard Elimination Checklist"** (part B of this document). The 'checklist' records the various significant (high risk) hazards identified by the designer(s) and, where they have been able, details of how they have been eliminated.

It is recognised that not every hazard can be 'designed out' and therefore the checklist will also be used to record the residual risks of which the designer(s) are aware.

The checklist provides an audit trail of the design process and may also be used as evidence in the event that a designer is required to defend his or her actions in any HSE investigation.

Copies of parts A and B should be passed to all members of the project team, especially the Principal Designer. Reference must also be made to GG104 Requirements for safety risk assessment.

**Part A: Designer's Hazard Checklist**

<b>Project Title:</b>	<b>570131D Priority VRS VM Development Batch 1 – 611 Site 5 – M5 J24-25 BD MP 192.4-193.6 VRS</b>			<b>Kier Highways Job No.:</b>	<b>1040304</b>
<b>Project Description:</b>	<p>This DHIRRS is specifically prepared for the proposed survey works within the central reserve, including lane 3 in both directions of the M5 within the site extents. The survey works will include;</p> <ul style="list-style-type: none"> <li>- Topographical Survey</li> <li>- Drainage surveys including manholes surveys and CCTV surveys of pipework.</li> <li>- Trial Holes</li> <li>- Pavement Cores</li> <li>- Asbestos refurbishment survey</li> <li>-</li> </ul> <p>Refer to survey drawings; HE570131D-KIER-VGN-M5_J23-24_CR-DR-CH-010001 to 010002</p> <p>This scheme stretches across the following chart sections;</p> <ul style="list-style-type: none"> <li>- 1100M5/360 Ch373m – Ch1001m (628m)</li> <li>- 1100M5/370 Ch0m – Ch628m</li> </ul>				
<b>Design Discipline:</b>	<b>Highways – Renewal of Roads</b>				
<b>Project Type as determined by GG104 (if applicable)</b>	<b>A</b>	<b>Prepared By:</b>	[REDACTED]		

**Notes:**

1. This section of the document includes a list of potential hazards pertaining to a wide range of situations which may occur across Kier Highways' activities. *Where particular categories do not ordinarily affect the scheme, **Part A should be edited/sections deleted to more accurately reflect the work carried out.***
2. An individual item or a whole section (by ticking the heading) can be noted as not applicable showing you have considered the hazard area and judged it to be not applicable.
3. The list of potential hazards is not exhaustive, and all sections can be added to, or additional sections added, as required. Reference to the Approved Code of Practice may be helpful.
4. All items considered by the designer as having a potential high risk must be addressed on the 'Hazard Elimination Management Schedule'. Low risk activities can also be included if considered appropriate.
5. Consideration must be given to all populations that may be affected as follows -

<b>Population 1</b> – People directly employed by the Client and who work on the site e.g. Traffic Officers.	<b>'Workers'</b>
<b>Population 2</b> – People in a contractual relationship with the client.	
<b>Population 3</b> – Other parties, including road users, the police and emergency services and non-motorised 'Users' such as equestrians, cyclists and pedestrians, as well as those others	<b>'Users'</b>

not in a contractual relationship with the client, such as privately contracted vehicle recovery and vehicle repair providers.	
<b>Population 4</b> – Third parties includes any person or persons who could be affected by the works, but who are neither using it, nor working on it, i.e. living or working adjacent to the site.	<b>'Other Parties'</b>

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Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
1.	Existing Environment				
1.1	Existing buildings	✓			Works are entirely within the highway boundary therefore no effect is anticipated.
1.2	Previous/existing land/ structures			✓	Location of underbridge and overbridge are highlighted on the construction drawings. Refer to Appendix C in PCI for details.
1.3	Roadways			✓	Works will be undertaken with a night time part carriageway / road closures. TM operatives will be working adjacent to live traffic during installation, maintenance and removal of TM. An 'airlock' system and gatesman should be in place to prevent unauthorised access.
1.4	Railways	✓			There are no railway underbridges within the scheme extents.
1.5	Water course	✓			
1.6	Ground conditions:	✓			
	• Contamination	✓			
	• Ground water	✓			
	• Instability	✓			
	• Mineral / mine workings	✓			
1.7	Access restrictions		✓		Live traffic will be present on the M5 under traffic management with a restricted speed limit.
1.8	Adjacent properties	✓			There are no properties adjacent to the carriageway along the works area.
1.9	Concurrent site activities			✓	There will be different types of survey works taking place throughout the duration of the works within the site extents.
1.10	Interface with the public		✓		Live traffic will be present on the M5. There are no pedestrian routes within the works area.



Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
1.11	Occupied premises	✓			
1.12	Structural instability	✓			
1.13	Fragile materials	✓			
1.14	Hazardous materials		✓		Hot works permits will be required for all work involving bituminous products.
1.15	Land use	✓			
1.16	Traffic			✓	Live traffic present on M5 during TM setup / removal and during the works under traffic management with a restricted speed limit.
1.17	Night Time Working			✓	Works are to be completed at night leading to increased risks of slips, trips and falls.
1.18	Asbestos		✓		Previous AAP's show ACM's are presumed present in nearside verges within electrical boxes. However, asbestos materials are unlikely to be encountered as part of these works. A type 2 Asbestos management survey is due to be undertaken as part of these works.
1.19	Plant Movement			✓	Plant movement in areas of site staff during darkness hours. A banksman should be present to ensure safe movement of the plant.
2.	<b>Existing Services</b>				
2.1	Underground				
	• Electrical			✓	33kV voltage underground electric cables present within the works area. Refer to Statutory Undertakers Plans and Appendix E for more details.
	• Gas	✓			There are no gas services present within the works area.
	• Water (Asbestos pipes?)		✓		There are 2no water mains services which cross the carriageway and present within the works area.

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
	<ul style="list-style-type: none"> <li>Telecommunications</li> </ul>			✓	There are BT underground cables present within the works area. Refer to Statutory Undertakers Plans and Appendix E for more details.
	<ul style="list-style-type: none"> <li>Loops</li> </ul>			✓	Motorway communications / loops are present within the works area.
2.2	Overhead Services				
	<ul style="list-style-type: none"> <li>Electrical</li> </ul>			✓	There are overhead electric cables (11kV voltage) present within the area of works and cross the site in 1 location.  Contractor is to obtain the safe working height prior to the start of the works. (Refer to Statutory undertakers records within the Survey Documentation)
	<ul style="list-style-type: none"> <li>Telecommunications</li> </ul>	✓			
	<ul style="list-style-type: none"> <li>Others (insert as necessary)</li> </ul>	✓			
<b>3.</b>	<b>Earthworks</b>	✓			
3.1	Deep excavations				
3.2	Slope / ground stability				
3.3	Ground water / water courses				
3.4	Plant movements				
3.5	Interface with services (refer 2)				
3.6	Contamination (ground / water) (refer 1.6)				
3.7	Adjacent structures (refer 1.8)				
3.8	Others (insert as necessary)				
<b>4.</b>	<b>Foundations</b>	✓			
4.1	Adjacent buildings/structures				
4.2	Deep excavations				
4.3	Plant movements				
4.4	Interface with services				
4.5	Contamination (ground / water)				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
4.6	Ground water				
4.7	Confined spaces				
4.8	Piling:				
	• Noise				
	• Vibration				
	• Contamination				
	• Plant				
4.9	Grouting:				
	• Drilling work				
	• Dust				
	• Pollution				
4.10	Stability of structure				
4.11	Others (insert as necessary)				
<b>5.</b>	<b>Services Installation</b>	✓			
5.1	Excavations				
5.2	Ground water				
5.3	Ground conditions				
5.4	Existing services				
5.5	Testing operations				
5.6	Lifting operations				
5.7	Adjacent structures / activities				
5.8	Maintenance				
5.9	Contamination				
5.10	Others (insert as necessary)				
<b>6.</b>	<b>Drainage Works</b>				
6.1	Excavations				
6.2	Ground water				
6.3	Ground conditions				
6.4	Confined spaces			✓	Drainage survey works will be taking place including manhole and pipework CCTV surveys.
6.5	Leptospirosis / Weils disease			✓	Drainage survey works will be taking place including manhole and pipework CCTV surveys. Contractor to

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
					ensure sufficient welfare facilities are in place at all times. All appropriate PPE must be worn at all times.
6.6	Existing services (asbestos pipes?)	✓			
6.7	Manual handling	✓			
6.8	Lifting operations		✓		Drainage survey works will be taking place including manhole and pipework CCTV surveys.
6.9	Maintenance	✓			
6.10	Sewage	✓			
6.11	Traffic			✓	Live traffic present on M5 during TM setup / removal and during the works under traffic management with a restricted speed limit.
6.12	Contamination (ground / water)		✓		Contractor to ensure sufficient welfare facilities are in place at all times. All appropriate PPE must be worn at all times.
6.13	Hepatitis B / Tetanus		✓		Contractor to ensure sufficient welfare facilities are in place at all times. All appropriate PPE must be worn at all times.
6.14	Lighting			✓	Survey works are to be completed at night, leading to increased risk of slips, trips and falls. Contractor to ensure adequate lighting is provided for safety of operations.
7.	<b>Highways</b>				
7.1	Traffic management			✓	Temporary traffic management will be required to part close the M5 in both directions within the scheme extents and to prevent unauthorised access.
7.2	Adjacent traffic			✓	Live traffic present on M5 during TM setup / removal and during the works under traffic management with a restricted speed limit.

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
7.3	Construction materials		✓		Access to the site will be provided within the TM setup for all deliveries / waste removal. All materials to be installed and handled by competently trained operatives only. Refer to Control of Substances Hazardous to Health (COSHH) assessments.
7.4	Structural works	✓			
7.5	Adjacent structures			✓	Location of overbridges are highlighted on the construction drawings. Refer to Appendix C in PCI for details.
7.6	Noise		✓		All site operatives to be provided with suitable and sufficient PPE and appropriate control measures are to be adopted to minimise duration of exposure to upper noise limits.
7.7	Vibration		✓		Suitable control measures are to be adopted to avoid Hand Arm Vibration (HAV) or reduce the duration of exposure.
7.8	Coal TAR in pavement		✓		Pavement investigations including trial holes and cores will be undertaken across the scheme extents, which will be subject to PAK testing to determine whether TBM's are present.
7.9	Night work			✓	Works are to be completed at night leading to increased risks of slips, trips and falls. Task lighting to be provided by Contractors as appropriate.
8.	<b>Steelwork Construction</b>	✓			
8.1	Working at height				
8.2	Lifting operations				
8.3	Temporary stability				
8.4	Connections				
8.5	Unusual sequence				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
8.6	Materials, e.g. paints				
8.7	Consideration of future maintenance				
8.8	Others (insert as necessary)				
<b>9.</b>	<b>Concrete Construction</b>	✓			
9.1	Working at height				
9.2	Plant restrictions				
9.3	Lifting operations				
9.4	Noise				
9.5	Vibration				
9.6	Temporary instability				
9.7	Pre/post tensioning				
9.8	Materials				
9.9	Maintenance				
9.10	Joints (scabbling should not be undertaken)				
9.11	Others (insert as necessary)				
<b>10.</b>	<b>Masonry Construction</b>	✓			
10.1	Manual handling				
10.2	Lifting operations				
10.3	Materials				
10.4	Temporary stability				
10.5	Working at height				
10.6	Dust				
10.7	Durability				
10.8	Catastrophic collapse				
10.9	Others (insert as necessary)				
<b>11.</b>	<b>Timber Construction</b>	✓			
11.1	Materials				
11.2	Working at height				
11.3	Temporary stability				
11.4	Lifting operations				
11.5	Manual handling				
11.6	Fire				
11.7	Dust				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
11.8	Others (insert as necessary)				
<b>12.</b>	<b>Cladding</b>	✓			
12.1	Lifting operations				
12.2	Manual handling				
12.3	Maintenance / cleaning				
12.4	Others (insert as necessary)				
<b>13.</b>	<b>Glazing</b>	✓			
13.1	Manual handling				
13.2	Lifting operations				
13.3	Cleaning / maintenance				
13.4	Others (insert as necessary)				
<b>14.</b>	<b>Mechanical/Electrical Systems</b>	✓			
14.1	Access				
14.2	Existing services (asbestos?)				
14.3	Manual handling				
14.4	Materials / substances				
14.5	Confined spaces				
14.6	Pressure systems				
14.7	Testing operations				
14.8	Fixings				
14.9	Working at height				
14.10	Maintenance				
14.11	Others (insert as necessary)				
<b>15.</b>	<b>Railway Activities</b>	✓			
15.1	Train movements				
15.2	Overhead lines				
15.3	Electrified track				
15.4	Underground services				
15.5	Adjacent structures				
15.6	Ground stability				
15.7	Contamination				
15.8	Others (insert as necessary)				



Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
16.	<b>Demolition of Existing Structures</b>	✓			
16.1	Services				
16.2	Adjacent / adjoining structures				
16.3	Materials:				
	<ul style="list-style-type: none"> <li>Hazardous i.e. asbestos in permanent shuttering, waterproofing to bridge decks, joints etc.</li> </ul>				
	<ul style="list-style-type: none"> <li>fragile</li> </ul>				
16.4	Working at height				
16.5	Temporary stability				
16.6	Pre/post tensioning				
16.7	Noise				
16.8	Vibration				
16.9	Dust				
16.10	Effect on usage of demolition materials				
16.11	Others (insert as necessary)				
17.	<b>Future Demolition / decommissioning of new structure/installation</b>	✓			
17.1	Unusual sequence				
17.2	Pre/post tensioned element				
17.3	Materials				
17.4	Adjacent/adjoining structure				
17.5	Temporary stability				
17.6	Contamination during usage of demolition material.				
17.7	Others (insert as necessary)				
18.	<b>Maintenance and Operation of Facility / Structure etc.</b>	✓			
18.1	Access				
18.2	Safety equipment				
18.3	Testing / inspection				
18.4	Procedure				
18.5	Contamination during usage of demolition material.				
18.6	Others (insert as necessary)				
19.	<b>Use of the structure as a workplace</b>	✓			



Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
19.1	Does the proposed use of the structure / premises include the intention for it to be made available to any person as a place of work				
19.2	If yes; the design and materials used must take in to account the provisions of the Workplace (Health, Safety and Welfare) Regulations 1992				

FOR INFORMATION ONLY

## Part B: Hazard Elimination Checklist

<b>Project Title:</b>	570131D Priority VRS VM Development Batch 1 – 611 Site 5 – M5 J24-25 BD MP 192.4-193.6 VRS		<b>Kier Highways Job No.:</b>	1040304
<b>Project Description:</b>	<p>This DHIRRS is specifically prepared for the proposed survey works within the central reserve, including lane 3 in both directions of the M5 within the site extents. The survey works will include;</p> <ul style="list-style-type: none"> <li>- Topographical Survey</li> <li>- Drainage surveys including, manholes surveys and CCTV surveys of pipework.</li> <li>- Trial Holes</li> <li>- Pavement Cores</li> <li>- Asbestos refurbishment survey</li> </ul> <p>Refer to survey drawings; HE570131D-KIER-VGN-M5_J23-24_CR-DR-CH-010001 to 010002</p> <p>This scheme stretches across the following chart sections;</p> <ul style="list-style-type: none"> <li>- 1100M5/360 Ch373m – Ch1001m (628m)</li> <li>- 1100M5/370 Ch0m – Ch628m</li> </ul>			
<b>Design Discipline:</b>	Highways – Renewal of Roads	<b>Prepared By:</b>		

**Note: If GG104 applies to your contract, the checklist must be approved by an appropriate person. For a Type A project the Scheme PD must approve, for a Type B projects the Senior Manager must approve and for a Type C project the Kier Highways Service Director must approve.**

Reviewed and approved by:

<b>Name</b>	
<b>Signature</b>	
<b>Position</b>	

\* **Persons at Risk:** (1) Workers (2) Users (3) Other parties

\*\* **Action by:**

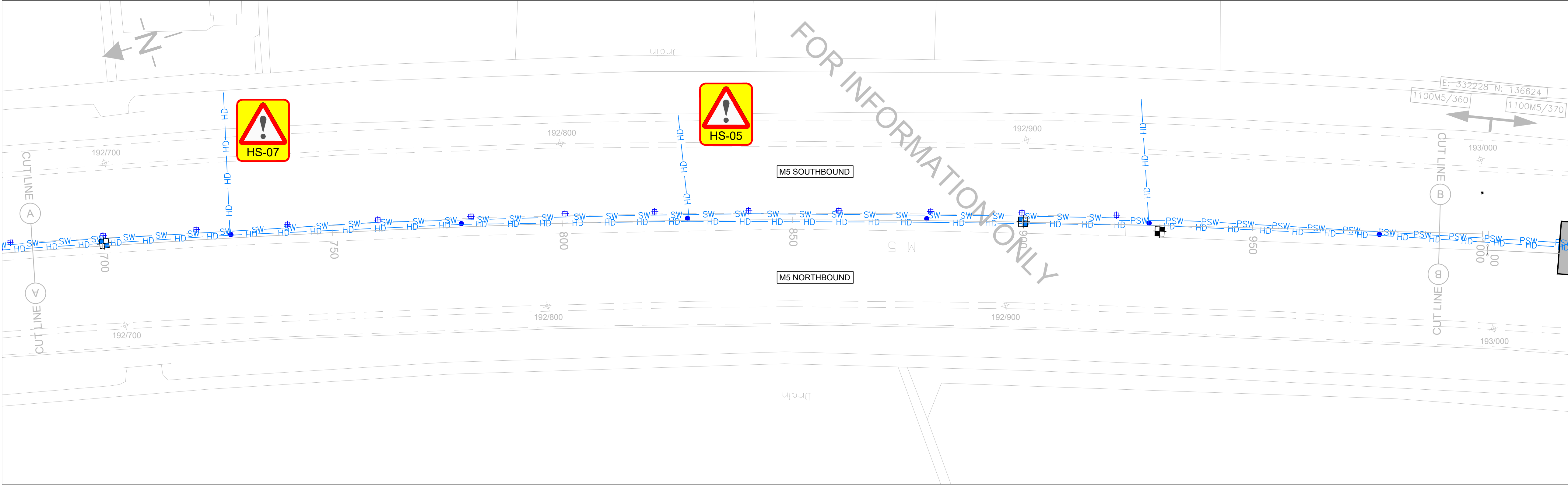
Principal Designer	- Include within the H&S file
Designer	- include in the pre-construction information
Principal Contractor	- manage risk during the construction phase
Other designer	- take into consideration when preparing their designs

Client

– pass information to designers / Principal designer

Ref.	Activity	Hazard	Persons at Risk *	Design Measures taken, or being taken to eliminate or reduce the hazard	Information on the Residual Risk	Principal Designer Review	Action Req'd by: **
1.3 1.16 7.1 7.2	Roadways Traffic Traffic Management Adjacent Traffic	Working adjacent to live carriageway. Harm to operatives from public ignoring signage/TM.	1,2	Traffic management proposed to create a safety zone between work force and users. All work is to be undertaken using night time part route closures. TM design/set up is to ensure cone spacing prevents public access. An 'airlock' system should be in place to prevent unauthorised access.	The risk is reduced but still a residual risk remains and shall be conveyed to contractor(s) via the construction drawings and design information pack.	No further comment.	PC
1.2 7.5	Structures Adjacent Structures	Overbridges within works area. Height restrictions.	1	Location of overbridges are highlighted on the construction drawings. Refer to Appendix C in PCI for details. Contractor to obtain safe working heights prior to the start of the works.	The risk is reduced but still a residual risk remains and shall be conveyed to contractor(s) via the construction drawings and design information pack	No further comment.	PC
2.1 2.2	Existing services underground. Existing services overground.	Operatives/ plant/ equipment striking existing underground and overground services.	1	Refer to STATS information for further details. Work to be carried out in accordance with HSG 47.  Note the presence of all Statutory Undertakers services and mark them on ground prior to the start of the works.	The risk is reduced but still a residual risk remains and shall be conveyed to contractor(s) via the construction drawings and design information pack	No further comment.	D/PC
1.17 1.19 7.9 6.14	Night-time working Plant Movement Night-work Lighting	Poor visibility increasing risk of slips, trips and falls. Collision of site vehicles and site staff in darkness hours.	1	Suitable task or temporary lighting to be provided at all stages of the scheme works. Suitable PPE is to be worn at all times, including appropriate footwear/clothing for the tasks being carried out.	The use of temporary lighting reduces the risk to an acceptable level. Banksman to be used for reversing vehicles where appropriate. All staff to wear appropriate PPE	No further comment.	PC

Ref.	Activity	Hazard	Persons at Risk *	Design Measures taken, or being taken to eliminate or reduce the hazard	Information on the Residual Risk	Principal Designer Review	Action Req'd by: **
1.18	Asbestos	Exposure to ACMs	1	Previous AAP's show ACM's are presumed present in nearside verges within electrical boxes. However, asbestos materials are unlikely to be encountered as part of these works. A type 2 Asbestos management survey is due to be undertaken as part of these works.  Suitable PPE is to be worn at all times.	A residual risk remains and shall be conveyed to contractor(s) via the construction drawings and design information pack	No further comment.	PC
1.9	Concurrent site activities	Interface between contractors during different survey works activities.	1	Principal contractor to ensure different survey activities do not take place in the same areas at the same time to reduce the likelihood of accidents to workers in the works areas.	A residual risk remains and shall be conveyed to contractor(s) via the construction drawings and design information pack	No further comment.	PC
6.5	Leptosirois / Weils Disease	Workers exposed to Leptosirois / Weils Disease during drainage survey works.	1	Suitable PPE is to be worn at all times.	A residual risk remains and shall be conveyed to contractor(s) via the construction drawings and design information pack	No further comment.	PC
6.4	Confined spaces	Working in confined spaces during drainage survey works.	1	Suitable PPE is to be worn at all times. Contractor to look into possibility of avoiding the need for workers to enter into confined spacing in order to carry out the survey works. However if the works in confined spaced cannot be avoided then a risk assessment shall be carried out to ensure a safe system of working.	A residual risk remains and shall be conveyed to contractor(s) via the construction drawings and design information pack	No further comment.	PC
N/A	All activities	Covid 19	All	Contractors RAMS to incorporate government guidance on social/physical distancing	Risk remains however likelihood reduced	No further comment.	PC & Contractors




KEY

- |     |   |               |                                       |
|-----|---|---------------|---------------------------------------|
| ●   | EXISTING MANHOLE  | — HD — HD —   | EXISTING HIGHWAY DRAIN                |
| ⊕   | EXISTING GULLY  | — SW — SW —   | EXISTING SURFACE WATER DRAIN          |
| ⊕   | TRIAL HOLE SURVEY (STRUCTURES) & SOIL SAMPLING (2No)                                    | — PSW — PSW — | EXISTING SURFACE WATER CHANNEL        |
| ⊕   | CORE (1No)  | — 11KV O/H —  | EXISTING 11KV OVERHEAD ELECTRIC CABLE |
| ⊕   | TRIAL HOLE SURVEY (STATS DEPTHS), SOIL SAMPLING (9No)                                   |               |                                       |
| DCP | DCP TESTING REQUIRED AT SAMPLE  |               |                                       |
|     | SURVEY AREA (TOPOGRAPHICAL SURVEY, DRAINAGE AND ASBESTOS REFURBISHMENT SURVEY) (2449m²) |               |                                       |

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RESIDUAL DESIGN HAZARDS

THE FOLLOWING HAS BEEN COLLECTED FROM THE PRE-CONSTRUCTION INFORMATION AND HIGHLIGHTS KNOWN RESIDUAL HAZARDS.

KEY  HS-# = HEALTH AND SAFETY RISK REFERENCE NUMBER  
E-# = ENVIRONMENT RISK REFERENCE NUMBER

HS-01 - EXISTING OVERHEAD ELECTRICITY CABLES  
HS-02 - EXISTING OVERHEAD STRUCTURES  
HS-05 - STATUTORY UNDERTAKERS (UNDERGROUND)  
HS-07 - EXISTING CULVERT

NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS WITHIN THE SERIES.
- CROSS CARRIAGEWAY INDICATIVE LOCATIONS OF STATUTORY UNDERTAKERS SERVICES HAVE BEEN PROVIDED ON THIS DRAWING FOR TRIAL HOLE SURVEY PURPOSES. FOR STATUTORY UNDERTAKERS SERVICES INFORMATION REFER TO DRAWING NO. HE570131D-KIER-HGN-M5\_J23-24\_CR-DR-CH-010004 to 05. NO GUARANTEE IS GIVEN TO ITS ACCURACY.
- MARKER POSTS ARE SHOWN FOR INDICATIVE PURPOSE ONLY. CHAINAGES SHOWN ON THIS DRAWING HAVE BEEN SET OUT AT LEAST EVERY 50m ALONG THE CHART SECTIONS INDICATED THROUGHOUT THE EXTENTS OF THE WORKS.
- THE OVERHEAD CABLES HAVE BEEN IDENTIFIED ON THE SCHEME DRAWINGS, HOWEVER INFORMATION REGARDING SAFE WORKING HEIGHTS IN ACCORDANCE WITH GS6 HAS NOT BEEN INDICATED. PRIOR TO THE COMMENCEMENT OF WORKS ON SITE, OVERHEAD CABLE HEIGHTS TO BE CONFIRMED AND RECORDED BY WAY OF SIGNATURE AND DATE BY A TRAINED AND COMPETENT PERSON.
- TRIAL HOLES LOCATED AT THE STRUCTURES ARE TO DETERMINE THE DEPTH OF BRIDGE PIER FOUNDATIONS AND OFFSET OF FOUNDATION EDGE FROM THE FACE OF THE BRIDGE PIER.
- THE WIDTH OF THE TOPOGRAPHICAL SURVEY EXTENTS WILL BE FROM LANE 2/3 ROAD MARKING SOUTHBOUND TO LANE 2/3 ROAD MARKING NORTHBOUND UNLESS INDICATED OTHERWISE.
- DRAINAGE CONNECTIVITY SURVEY IS FOR ALL DRAINAGE ASSETS IN A DRAINAGE SYSTEM, WHICH MAY ALSO INCLUDE DRAINAGE INFRASTRUCTURE OUTSIDE OF THE SURVEY AREA E.G. OUTFALLS.

C2	REDUCTION IN CORES AND TRIAL HOLES	LP	PPP	24/05/2021
C1	ISSUED FOR CONSTRUCTION.	LAH	SR	11/02/2021
P1	FOR INFORMATION.	SR	SR	30/09/2020
REV	DETAILS	CHKD	APPD	DATE

DRAWN : MK	DRAWING STATUS
DESIGN : MK	WORK IN PROGRESS
CHKD : LP	PRELIMINARY DRAWING
APPD : PPP	EXTERNAL ISSUE
DATE : 24/05/2021	AS-BUILT
SUITABILITY : S2	FOR INFORMATION

CLIENT



AGENT

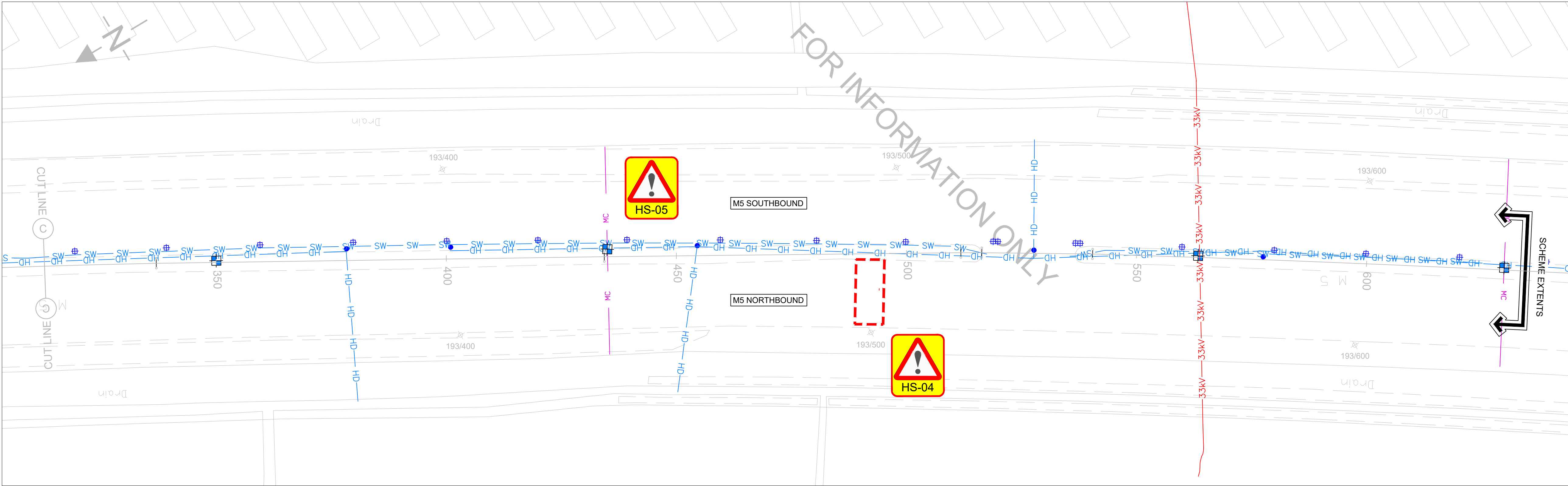
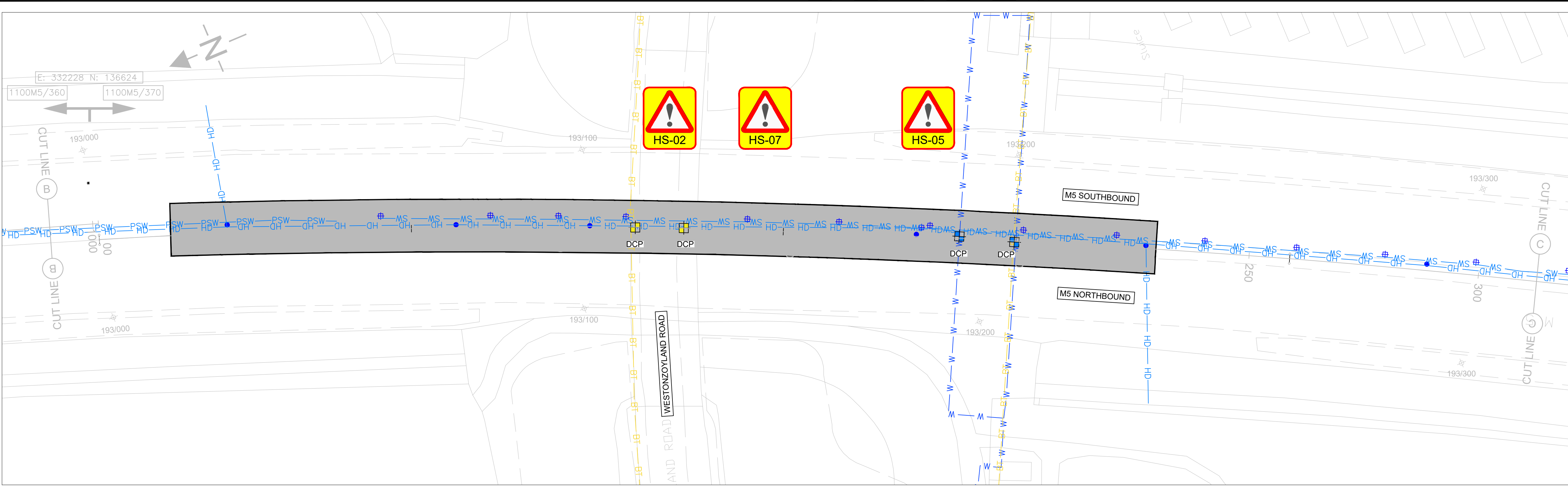


SCHEME NAME  
570131D PRIORITY VRS VM  
DEVELOPMENT BATCH 1

DRAWING TITLE  
SITE 5  
M5 J23-24 CENTRAL RESERVATION  
SURVEYS  
SHEET 1 OF 2

ORIG DRAWING SIZE : A1	DIMENSIONS : m
COPYRIGHT © KIER	SCALE : 1:500
DRAWING NUMBER	SCHEME REFERENCE No.
PROJECT   ORIGINATOR   VOLUME	1040304
HE570131D - KIER - VGN	
M5_J23-24_CR - DR - CH - 010001	REVISION
LOCATION   TYPE   ROLE   NUMBER	C 2





KEY

- EXISTING MANHOLE

⊕

EXISTING GULLY

⊞

TRIAL HOLE SURVEY (STRUCTURES) & SOIL SAMPLING (2No)

⊞

CORE (1No)

⊞

TRIAL HOLE SURVEY (STATS DEPTHS), SOIL SAMPLING (9No)

DCP

DCP TESTING REQUIRED AT SAMPLE

SURVEY AREA (TOPOGRAPHICAL SURVEY, DRAINAGE AND ASBESTOS REFRUBISHMENT SURVEY) (2449m<sup>2</sup>)
- BT

BT

EXISTING BT UNDERGROUND CABLE
- W

W

EXISTING WATER MAIN
- HD

HD

EXISTING HIGHWAY DRAIN
- SW

SW

EXISTING SURFACE WATER DRAIN
- PSW

PSW

EXISTING SURFACE WATER CHANNEL
- 33kV

33kV

EXISTING 33KV UNDERGROUND ELECTRIC CABLE
- MC

MC

EXISTING MOTORWAY COMMUNICATIONS CABLE
- LOCATION OF MOTORWAY COMMS/LOOPS

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RESIDUAL DESIGN HAZARDS

THE FOLLOWING HAS BEEN COLLECTED FROM THE PRE-CONSTRUCTION INFORMATION AND HIGHLIGHTS KNOWN RESIDUAL HAZARDS.

KEY

HS-#

= HEALTH AND SAFETY RISK REFERENCE NUMBER

E-#

= ENVIRONMENT RISK REFERENCE NUMBER

HS-02 - EXISTING OVERHEAD STRUCTURES

HS-04 - TRAFFIC LOOPS

HS-05 - STATUTORY UNDERTAKERS (UNDERGROUND)

HS-07 - EXISTING CULVERT

- NOTES
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS WITHIN THE SERIES.

2. CROSS CARRIAGEWAY INDICATIVE LOCATIONS OF STATUTORY UNDERTAKERS SERVICES HAVE BEEN PROVIDED ON THIS DRAWING FOR TRIAL HOLE SURVEY PURPOSES. FOR STATUTORY UNDERTAKERS SERVICES INFORMATION REFER TO DRAWING NO. HE570131D-KIER-HGN-M5\_J23-24\_CR-DR-CH-010004 to 05. NO GUARANTEE IS GIVEN TO ITS ACCURACY.

3. MARKER POSTS ARE SHOWN FOR INDICATIVE PURPOSE ONLY. CHAINAGES SHOWN ON THIS DRAWING HAVE BEEN SET OUT AT LEAST EVERY 50m ALONG THE CHART SECTIONS INDICATED THROUGHOUT THE EXTENTS OF THE WORKS.

4. THE OVERHEAD CABLES HAVE BEEN IDENTIFIED ON THE SCHEME DRAWINGS, HOWEVER INFORMATION REGARDING SAFE WORKING HEIGHTS IN ACCORDANCE WITH GS6 HAS NOT BEEN INDICATED. PRIOR TO THE COMMENCEMENT OF WORKS ON SITE, OVERHEAD CABLE HEIGHTS TO BE CONFIRMED AND RECORDED BY WAY OF SIGNATURE AND DATE BY A TRAINED AND COMPETENT PERSON.

5. TRIAL HOLES LOCATED AT THE STRUCTURES ARE TO DETERMINE THE DEPTH OF BRIDGE PIER FOUNDATIONS AND OFFSET OF FOUNDATION EDGE FROM THE FACE OF THE BRIDGE PIER.

6. THE WIDTH OF THE TOPOGRAPHICAL SURVEY EXTENTS WILL BE FROM LANE 2/3 ROAD MARKING SOUTHBOUND TO LANE 2/3 ROAD MARKING NORTHBOUND UNLESS INDICATED OTHERWISE.

7. DRAINAGE CONNECTIVITY SURVEY IS FOR ALL DRAINAGE ASSETS IN A DRAINAGE SYSTEM, WHICH MAY ALSO INCLUDE DRAINAGE INFRASTRUCTURE OUTSIDE OF THE SURVEY AREA E.G. OUTFALLS.

C2	REDUCTION IN CORES AND TRIAL HOLES	LP	PPP	24/05/2021
C1	ISSUED FOR CONSTRUCTION.	LAH	SR	11/02/2021
P1	FOR INFORMATION.	SR	SR	30/09/2020
REV	DETAILS	CHKD	APPD	DATE

DRAWN : MK	DRAWING STATUS
DESIGN : MK	WORK IN PROGRESS
CHKD : LP	PRELIMINARY DRAWING
APPD : PPP	EXTERNAL ISSUE
DATE : 24/05/2021	AS-BUILT
SUITABILITY : S2	FOR INFORMATION

CLIENT

AGENT

SCHEME NAME

570131D PRIORITY VRS VM DEVELOPMENT BATCH 1

DRAWING TITLE

SITE 5

M5 J23-24 CENTRAL RESERVATION SURVEYS

SHEET 2 OF 2

ORIG DRAWING SIZE : A1	DIMENSIONS : m	SCHEME REFERENCE No.
COPYRIGHT © KIER	SCALE : 1:500	1040304
DRAWING NUMBER	PROJECT   ORIGINATOR   VOLUME	REVISION
HE570131D -	KIER - VGN	1040304
M5_J23-24_CR -	DR - CH -	010002
LOCATION	TYPE   ROLE   NUMBER	C 2

**Kier Highways Project No:****Client Reference No:****570131D Priority VRS VM Development Batch 1****619 Site 16 – M5 J23-24 BD MP 195.1 – 196 VRS****Pre-Construction Information**

	Yes	No
Are Works to be carried out under the Commission / Contract Health and Safety Plan?		X
Is the Scheme notifiable under the CDM Regulations 2015?		
1. Last longer than 30 working days and have more than 20 workers simultaneously at any point in the project;	X	
2. Exceed 500 person days	X	

<b>Project type as categorised by GG104</b>	<b>A</b>
<p>* If applicable GG104 will determine the Kier Highways minimum Scheme Principal Designer (Scheme PD) level. Refer to SHEMS-FOR-HIG-S-055 for GG104 type categorisation and minimum Scheme PD level.</p> <p>Type A projects the Design Team Lead, Type B projects the Senior Manager, Type C projects the Service Director.</p>	

This document has been produced in accordance with the recommendations and requirements of the Construction (Design and Management) Regulations 2015.

Prepared by: Designer	
Reviewed by; Design Team Lead	
Accepted by: Scheme PD	

'Reviewed by' & 'Accepted by' can be the same person for GG104 type A projects (where the Design Team Lead is the Scheme PD)



Authorised By: [REDACTED]	Page 1 of 13	SHEMS-FOR-HIG-051
Author: Highways CDM Team	Date: October 2019	Version: 1.0
As part of our system review, this document is valid until April 2021		



Site Specific Hazards Identified in Design		
<p><b><i>ONLY include significant and unusual hazards that a competent contractor would need to know, could not reasonably foresee, or are likely to be difficult to manage effectively.</i></b></p> <p><b>Note – Consideration to be given to all ‘populations’ affected, Workers, Users, Other Parties.</b></p>		
Activity	Residual Hazard	Comments
Trial Hole / Core Survey Works	Conflict / risk of striking with STATS equipment. Working adjacent to live Services.	Indicative location of Statutory Undertakers Services (C2 Information) are shown on the Proposed Survey drawings for information only. No guarantee is given for its accuracy. Contractor should refer to Statutory Undertakers plans in the design information pack and undertake investigations prior to start of works to satisfy themselves of the location of services.
Traffic Management	Overhead Electric Cables	There are overhead electric cables present within the area of the works. Location of overhead services are shown on the statutory undertakers and survey drawings. Refer to Appendix E for more details.
Night time working	Poor illumination of work area. Reduced visibility of hazards and site operatives.	Adequate lighting for night time working to be provided by the contractor. Banksman should be present to ensure safe movement of plant within the works.
Drainage / manhole surveys	Working in confined spaces	Suitable PPE is to be worn at all times. Contractor to look into possibility of avoiding the need for workers to enter into confined spacing in order to carry out the survey works. However if the works in confined spaced cannot be avoided then a risk assessment shall be carried out to ensure a safe system of working.
All activities	Covid 19	Government guidelines on social / physical distancing to be incorporated into RAMS



1 Project Description			
<b>Scope of Works</b>			
<p>This PCI is specifically prepared for the proposed survey works within the central reserve, including lane 3 in both directions of the M5 within the site extents. The survey works will include;</p> <ul style="list-style-type: none"> <li>- Topographical Survey</li> <li>- Drainage surveys including manholes surveys and CCTV surveys of pipework.</li> <li>- Trial Holes</li> <li>- Pavement Cores</li> <li>- Asbestos refurbishment survey</li> </ul> <p>Refer to survey drawings; HE570131D-KIER-VGN-M5_J24_CR-DR-CH-010001 to 010002</p> <p>This scheme stretches across the following chart sections;</p> <ul style="list-style-type: none"> <li>- 3300M5/390 Ch45m – Ch518m (473m)</li> <li>- 3300M5/394 Ch0m – Ch546m</li> <li>- 3300M5/406 Ch0m – Ch580m</li> </ul>			
<b>Location</b>			
<p>See Location Plan listed in current Document Issue Sheet or Appendix A. Drawing no. HE570131D-KIER-HGN-M5_J23-J24_CR-DR-CH-000001.</p>			
Site Address	M5 J23-24 CR BD MP 195.1 - 196 Sedgemoor, Somerset		
<b>Site Photographs</b>			
N/A			
<b>OSGR, MP or</b>	From	331067, 134878	To 330526, 134134
<b>Str Key / Name</b>	Str Key	Structure Name	
<p>Huntworth Interchange South Overbridge – Structure Key: 1833, Structure No. /24/M5//196.10//, MP 196.10m</p> <p>Huntworth Interchange North Overbridge - Structure Key: 1832, Structure No. /24/M5//196.00//, MP 196.00</p> <p>Huntworth Lodge Overbridge - Structure Key: 1831, Structure No. /M5//195.40//, MP 195.40</p>			
<b>Traffic Management</b>			
<p><b>Traffic Management arrangements:</b></p> <p><b>Traffic Flows:</b></p> <p>2019 (WebTris) AADT NB 5255/2 = 32,095 (12.7%)</p> <p>2019 (WebTris) AADT SB 5256/2 = 32,651 (12.4%)</p> <p><b>Speed Limits:</b> The existing speed limit within the scheme extents is National Speed Limit for Motorways (70mph).</p> <p><b>Cycle / bus Routes:</b> There are no bus or cycle routes through the works area.</p> <p><b>Traffic Management:</b> Works will be undertaken with a night time part carriageway/road closures.</p> <p><b>Emergency access:</b> Access will be required by emergency services through Traffic Management at all times.</p>			
Anticipated Working Hours, subject to Traffic Counts		TBC	

1 Project Description					
Mobilisation Period	TBC	Anticipated Start Date	TBC	Anticipated End Date	TBC

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3. Scheme Specific Requirements			
	Yes	No	Comments
A pre-start meeting will be mandatory			
Does an H&S file exist?		✓	
Site Welfare	✓		Site Welfare provisions to be provided.
Security / Segregation		✓	The Principal Contractor shall provide adequate security to the site.
Are there any other projects taking place in the vicinity?		✓	
Are there any restrictions on vehicle movements?	✓		All site vehicles (incl. delivery vehicles) must abide by the TM requirements and regulations 1. enter and exit site from the dedicated points; 2. Comply with the designated site safety speed limits; All vehicles within Traffic Management shall comply with the conspicuity requirements of Chapter 8.
Are there any restrictions on deliveries, waste collection, or storage?	✓		No deliveries to take place unless Traffic Management is in place. No waste shall be stored on site. Waste Carriers Licence required
Are there any parking restrictions?	✓		All vehicles and plant within the works area shall be parked in a safe area clear of access and egress points. All vehicles and plant shall be removed from the carriageway prior to removal of traffic management. No Private vehicles are allowed on site
Height Restrictions	✓		There are overhead electric services and 3no overbridges within the works area. Refer to Appendix C for more details.
Overhead Cables	✓		There are overhead electric services within the works area. Refer to Appendix C for more details.
Structures	✓		<ul style="list-style-type: none"> <li>- Huntworth Interchange South Overbridge – Structure Key: 1833, Structure No. /24/M5//196.10//, MP 196.10m</li> <li>- Huntworth Interchange North Overbridge - Structure Key: 1832, Structure No. /24/M5//196.00//, MP 196.00</li> <li>- Huntworth Lodge Overbridge - Structure Key: 1831, Structure No. /M5//195.40//, MP 195.40</li> </ul>
Will fire precautions be required?	✓		Suitable fire precautions shall be in place and in accordance with the Contractors hot works permit.

3. Scheme Specific Requirements			
	Yes	No	Comments
Are emergency procedures and means of escape required?	✓		The Contractor shall ensure that emergency procedure plans are in place, all staff has been inducted, and access for emergency vehicles to be maintained at all times. The nearest A&E hospital is; Musgrove Park Hospital Parkfield Drive Taunton Somerset TA1 5DA Tel: 01823 333 444 24hr A&E Service
Are there any areas in or around the site classified as no-go areas?	✓		No site personnel shall enter the safety zones or tapers within the extents of the traffic management unless trained and competent for installation/removal/maintenance of TM. Sub-Contractor's Method Statements and Risk Statements shall contain suitable risk control to protect pedestrian workers and plant operators.
Are there any noise restrictions?	✓		It is expected that construction noise will not significantly exceed the ambient road noise levels. Any increases in noise will be temporary and limited to the construction phase.
Are temporary works required?		✓	None
Are there any vibration restrictions?	✓		The Contractor shall comply with BS 6427:2008 Evaluations of human Exposure to Vibration in Buildings (1Hz-80Hz). Any vibration monitoring carried out shall also be in compliance with BS 6427: 2008.
Are there any poor or hazardous ground conditions		✓	None are anticipated – All works will be carried out within carriageway and central reservation area.
Are there any unstable structures?		✓	None
Are there any areas classed (existing or designed) classed as confined spaces?	✓		Drainage surveys will be taking place.
Are there any smoking restrictions?	✓		No smoking is allowed on site. Designated smoking areas to be confirmed during site inductions.
Any environmental constraints identified?		✓	None.

## Materials and Substances with Health and/or Safety Hazards

### Asbestos

The following asbestos documents have been located for this scheme;

- 020 AAP M5 J19-J24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Initial AAP – June 2008
- 021 AAP M5 J24-J27 – Asbestos Action Plan M5 J24 to J27 S/B & N/B – Initial AAP – June 2008
- 109 M5 J19-J24 MP 145.20 – 196.10 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Review of AAP – December 2013
- 109 B M5 J19-J24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B Monitoring and Inspection – February 2014
- 110B M5 J19-24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Review of AAP – March 2014
- M5 J19-24 Type 2 Survey Sapling and Assessment of Type 2 Materials – April 2008
- M5 J24-27 Type 2 Survey Sapling and Assessment of Type 2 Materials – April 2008

There are several electrical boxes within the extents of the northbound and southbound verges where ACM's are presumed to be present. However, these will not be affected as part of the works.

An asbestos refurbishment survey will be carried out as part of the survey works to confirm whether ACM's are present within the central reserve.

### Lead

Scope of Works are unlikely to encounter lead.

### Tar based pavement/surfacing

Testing for tar-based materials is required as part of the survey works.

### Leptospirosis/Weil's disease / Psittacosis

The drainage contractor will come into contact with highway drainage and has the potential risk of encountering Weil's disease. The Contractor is to ensure sufficient welfare facilities are in place at all times. All appropriate PPE must be worn at all times.

Any instances of illness / sickness on site should be reported to the Site Manager/Principal Contractor Representative immediately and the persons affected should seek medical advice.

### Covid-19 pandemic

*The Contractor is to ensure they are protecting their workforce and minimising the risk of spread of infection. They must comply with the latest Government advice on working safely during coronavirus covid-19 which is currently available at <https://www.gov.uk/guidance/working-safely-during-coronavirus-covid-19/construction-and-other-outdoor-work>. Further guidance is given in the Construction Leadership Council's "Construction Sector – Site Operating Procedures". The latest version may be found at <http://cic.org.uk/important-documents.php>*

*The health and safety requirements of any construction activity must not be compromised. If an activity cannot be undertaken in line with social distancing being implemented, or by exception, safely, without risk and mitigating measures then it shall not take place.*

4. Existing Services					Refer to STATS plans listed in Appendix C
Statutory Undertaker	Not Present	Over head	Under ground	Comments	
<b>Electricity</b>					
400/132kV [pylons]	✓			OH cables (11kv) are within the scheme extents and cross the carriageway in 1No location.	
66kV	✓				
33kV	✓				
11kV		✓			
240/415Volts	✓			Low voltage underground cables are within the scheme extents and cross the carriageway in 1No location.	
Low Voltage			✓	Refer to Statutory Undertakers Apparatus drawing no. HE570131D-KIER-HGN-M5_ML_J24-CR-DR-CH-010004-05.	
<b>Water (Foul and Potable)</b>					
Public Foul	✓			There are 2No water mains which cross the carriageway and highway drain gullies / iron work within works area.	
Pressurised Foul	✓				
Public Combined Gravity	✓				
Pressurised Combined	✓				
Culverted Watercourse			✓		
Water Main			✓		
Aqueduct	✓				
<b>Communications</b>					
Communications			✓	Refer to Motorway Communication section below.	
<b>British Telecom</b>					
British Telecom			✓		
<b>National Grid</b>					
National Grid	✓				
<b>Transco</b>					
LP Mains	✓				
MP Mains	✓				
IP Mains	✓				
LHP Mains	✓				
NHP Mains	✓				
<b>Government Pipelines</b>					
Government Pipelines	✓				
<b>Fisher German Pipelines</b>					
Fisher German Pipelines	✓				
<b>Energis</b>					
Energis	✓				
<b>Motorway Communication</b>					
Motorway Comms			✓	Loops present within works area.	
<b>Street Lighting</b>					
Street lighting	✓				
<b>Highway Drainage</b>					
			✓	Highway drain gullies / iron work within works area.	

<b>4. Existing Services</b>		Refer to STATS plans listed in Appendix C		
<b>Other</b>				
	✓			

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**5. Health and Safety file requirements**

All information will be produced in an electronic format. The format of the electronic data issued is to be as follows: All documents and product data sheets are to be in PDF format, drawings are to be in PDF and AutoCAD DWG format.

The Principal Contractor shall collate all appropriate information as it becomes available, and this shall subsequently be collated in the File. The Principal Contractor is to implement an early procedure that advises contractors and materials suppliers of the detailed requirements for this record information. The health and safety file will be created and/or updated in accordance with the requirements of the IAN105/08.

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Refer to drawing no. HE570131D-KIER-HGN-M5\_J24\_CR-DR-CH-000001.

## Appendix B - Construction Drawings

See Document Issue Sheet for list of current scheme drawings, alternately list below.

Reference	Rev	Title
HE570131D-KIER-VGN-M5_J24_CR-DR-CH-010001	P1	Site 16 M5 J24 Central Reservation Surveys Sheet 1 of 2
HE570131D-KIER-VGN-M5_J24_CR-DR-CH-010002	P1	Site 16 M5 J24 Central Reservation Surveys Sheet 2 of 2

## Appendix C – Existing Records and As-Built Drawings

See Document Issue Sheet for list of existing records and as-built drawings, alternately list below.

Reference	Rev	Title	Company
405/202/B02/04	-	Huntworth IC North – Column Foundation Arrangement & Reinforcement	Somerset County Council
405/202/B02/02/A	-	Huntworth IC North – General Arrangement	Somerset County Council
405/202/B02/05/A	-	Huntworth IC North – Layout & Reinforcement of Columns 2	Somerset County Council
405/202/B02/12/B	-	Huntworth IC North – Paving & Safety Fence Details	Somerset County Council
405/202/B01/04	-	Huntworth IC South – Column Foundation Arrangement & Reinforcement	Somerset County Council
405/202/B01/05/A	-	Huntworth IC South – Layout & Reinforcement of Columns	Somerset County Council
405/202/B01/02/B	-	Huntworth IC South – General Arrangement	Somerset County Council
405/202/B01/12/B	-	Huntworth IC South – Paving and Safety Fence Details	Somerset County Council

## Appendix D - Statutory Undertaker Drawings

See Document Issue Sheet for list of statutory undertaker drawings, alternately list below.

Reference	Rev	Title	Company
HE570131D-KIER-HGN-M5_J24_CR-DR-CH-010004	P1	Site 16 M5 J24 Central Reservation Statutory Undertakers Apparatus Sheet 1 of 2	All stats combined.

Reference	Rev	Title	Company
HE570131D-KIER-HGN-M5_J24_CR-DR-CH-010005	P1	Site 16 M5 J24 Central Reservation Statutory Undertakers Apparatus Sheet 2 of 2	All stats combined

## Appendix E – Overhead cables

See GS6 Measurements and Essential Safety Data and Appendix B and D for locations of overhead services.

## Appendix F - List of Structures

Structure	Type	Location Ref	Str key	OSGR
Huntworth Interchange South	Overbridge	/24/M5//196.10//	1833	330460, 134050
Huntworth Interchange North	Overbridge	/24/M5//196.00/	1832	330540, 134150
Huntworth Lodge	Overbridge	/M5//195.40//	1831	330900, 134660

## Appendix G - Asbestos Action Plans

- 020 AAP M5 J19-J24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Initial AAP – June 2008
- 021 AAP M5 J24-J27 – Asbestos Action Plan M5 J24 to J27 S/B & N/B – Initial AAP – June 2008
- 109 M5 J19-J24 MP 145.20 – 196.10 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Review of AAP – December 2013
- 109 B M5 J19-J24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B Monitoring and Inspection – February 2014
- 110B M5 J19-24 – Asbestos Action Plan M5 J19 to J24 S/B & N/B – Review of AAP – March 2014
- M5 J19-24 Type 2 Survey Sampling and Assessment of Type 2 Materials – April 2008
- M5 J24-27 Type 2 Survey Sampling and Assessment of Type 2 Materials – April 2008

### General Note:

During the design stages of a project, designers are required to maintain a “**Hazard Elimination Checklist**” (part B of this document). The ‘checklist’ records the various significant (high risk) hazards identified by the designer(s) and, where they have been able, details of how they have been eliminated.

It is recognised that not every hazard can be ‘designed out’ and therefore the checklist will also be used to record the residual risks of which the designer(s) are aware.

The checklist provides an audit trail of the design process and may also be used as evidence in the event that a designer is required to defend his or her actions in any HSE investigation.

Copies of parts A and B should be passed to all members of the project team, especially the Principal Designer. Reference must also be made to GG104 Requirements for safety risk assessment.

### Part A: Designer's Hazard Checklist

<b>Project Title:</b>	<b>570131D Priority VRS VM Development Batch 1 – 619 Site 16 – M5 J23-24 BD MP 195.1 – 196 VRS</b>			<b>Kier Highways Job No.:</b>	<b>1040304</b>
<b>Project Description:</b>	<p>This DHIRRS is specifically prepared for the proposed survey works within the central reserve, including lane 3 in both directions of the M5 within the site extents. The survey works will include;</p> <ul style="list-style-type: none"> <li>- Topographical Survey</li> <li>- Drainage surveys including manholes surveys and CCTV surveys of pipework.</li> <li>- Trial Holes</li> <li>- Pavement Cores</li> <li>- Asbestos refurbishment survey</li> </ul> <p>Refer to survey drawings; HE570131D-KIER-VGN-M5_J24_CR-DR-CH-010001 to 010002</p> <p>This scheme stretches across the following chart sections;</p> <ul style="list-style-type: none"> <li>- 3300M5/390 Ch45m – Ch518m (473m)</li> <li>- 3300M5/394 Ch0m – Ch546m</li> <li>- 3300M5/406 Ch0m – Ch580m</li> </ul>				
<b>Design Discipline:</b>	<b>Highways – Renewal of Roads</b>				
<b>Project Type as determined by GG104 (if applicable)</b>	<b>A</b>	<b>Prepared By:</b>	[REDACTED]		

### Notes:

1. This section of the document includes a list of potential hazards pertaining to a wide range of situations which may occur across Kier Highways' activities. *Where particular categories do not ordinarily affect the scheme, **Part A should be edited/sections deleted to more accurately reflect the work carried out.***
2. An individual item or a whole section (by ticking the heading) can be noted as not applicable showing you have considered the hazard area and judged it to be not applicable.
3. The list of potential hazards is not exhaustive, and all sections can be added to, or additional sections added, as required. Reference to the Approved Code of Practice may be helpful.
4. All items considered by the designer as having a potential high risk must be addressed on the ‘Hazard Elimination Management Schedule’. Low risk activities can also be included if considered appropriate.
5. Consideration must be given to all populations that may be affected as follows -

<b>Population 1</b> – People directly employed by the Client and who work on the site e.g. Traffic Officers.	<b>‘Workers’</b>
<b>Population 2</b> – People in a contractual relationship with the client.	

<b>Population 3</b> – Other parties, including road users, the police and emergency services and non-motorised 'Users' such as equestrians, cyclists and pedestrians, as well as those others not in a contractual relationship with the client, such as privately contracted vehicle recovery and vehicle repair providers.	<b>'Users'</b>
<b>Population 4</b> – Third parties includes any person or persons who could be affected by the works, but who are neither using it, nor working on it, i.e. living or working adjacent to the site.	<b>'Other Parties'</b>

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Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
1.	Existing Environment				
1.1	Existing buildings	✓			Works are entirely within the highway boundary therefore no effect is anticipated.
1.2	Previous/existing land/ structures			✓	Location of underbridge and overbridge are highlighted on the construction drawings. Refer to Appendix C in PCI for details.
1.3	Roadways			✓	Works will be undertaken with a night time part carriageway / road closures. TM operatives will be working adjacent to live traffic during installation, maintenance and removal of TM. An 'airlock' system and gatesman should be in place to prevent unauthorised access.
1.4	Railways	✓			There are no railway underbridges within the scheme extents.
1.5	Water course	✓			
1.6	Ground conditions:	✓			
	• Contamination	✓			
	• Ground water	✓			
	• Instability	✓			
	• Mineral / mine workings	✓			
1.7	Access restrictions		✓		Live traffic will be present on the M5 under traffic management with a restricted speed limit.
1.8	Adjacent properties	✓			There are no properties adjacent to the carriageway along the works area.
1.9	Concurrent site activities			✓	There will be different types of survey works taking place throughout the duration of the works within the site extents.
1.10	Interface with the public		✓		Live traffic will be present on the M5. There are no pedestrian routes within the works area.

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
1.11	Occupied premises	✓			
1.12	Structural instability	✓			
1.13	Fragile materials	✓			
1.14	Hazardous materials		✓		Hot works permits will be required for all work involving bituminous products.
1.15	Land use	✓			
1.16	Traffic			✓	Live traffic present on M5 during TM setup / removal and during the works under traffic management with a restricted speed limit.
1.17	Night Time Working			✓	Works are to be completed at night leading to increased risks of slips, trips and falls.
1.18	Asbestos		✓		Previous AAP's show ACM's are presumed present in nearside verges within electrical boxes. However, asbestos materials are unlikely to be encountered as part of these works. A type 2 Asbestos management survey is due to be undertaken as part of these works.
1.19	Plant Movement			✓	Plant movement in areas of site staff during darkness hours. A banksman should be present to ensure safe movement of the plant.
2.	<b>Existing Services</b>				
2.1	Underground				
	• Electrical			✓	Low voltage underground electric cables present within the works area. Refer to Statutory Undertakers Plans and Appendix E for more details.
	• Gas	✓			There are no gas services present within the works area.
	• Water (Asbestos pipes?)		✓		There are 2no water mains services which cross the carriageway and present within the works area.



Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
	<ul style="list-style-type: none"> <li>Telecommunications</li> </ul>			✓	There are BT underground cables present within the works area. Refer to Statutory Undertakers Plans and Appendix E for more details.
	<ul style="list-style-type: none"> <li>Loops</li> </ul>			✓	Motorway communications / loops are present within the works area.
2.2	Overhead Services				
	<ul style="list-style-type: none"> <li>Electrical</li> </ul>			✓	There are overhead electric cables (11kV voltage) present within the area of works and cross the site in 1 location.  Contractor is to obtain the safe working height prior to the start of the works. (Refer to Statutory undertakers records within the Survey Documentation)
	<ul style="list-style-type: none"> <li>Telecommunications</li> </ul>	✓			
	<ul style="list-style-type: none"> <li>Others (insert as necessary)</li> </ul>	✓			
<b>3.</b>	<b>Earthworks</b>	✓			
3.1	Deep excavations				
3.2	Slope / ground stability				
3.3	Ground water / water courses				
3.4	Plant movements				
3.5	Interface with services (refer 2)				
3.6	Contamination (ground / water) (refer 1.6)				
3.7	Adjacent structures (refer 1.8)				
3.8	Others (insert as necessary)				
<b>4.</b>	<b>Foundations</b>	✓			
4.1	Adjacent buildings/structures				
4.2	Deep excavations				
4.3	Plant movements				
4.4	Interface with services				
4.5	Contamination (ground / water)				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
4.6	Ground water				
4.7	Confined spaces				
4.8	Piling:				
	• Noise				
	• Vibration				
	• Contamination				
	• Plant				
4.9	Grouting:				
	• Drilling work				
	• Dust				
	• Pollution				
4.10	Stability of structure				
4.11	Others (insert as necessary)				
<b>5.</b>	<b>Services Installation</b>	✓			
5.1	Excavations				
5.2	Ground water				
5.3	Ground conditions				
5.4	Existing services				
5.5	Testing operations				
5.6	Lifting operations				
5.7	Adjacent structures / activities				
5.8	Maintenance				
5.9	Contamination				
5.10	Others (insert as necessary)				
<b>6.</b>	<b>Drainage Works</b>				
6.1	Excavations				
6.2	Ground water				
6.3	Ground conditions				
6.4	Confined spaces			✓	Drainage survey works will be taking place including manhole and pipework CCTV surveys.
6.5	Leptospirosis / Weils disease			✓	Drainage survey works will be taking place including manhole and pipework CCTV surveys. Contractor to