



C305- Eastern Running Tunnels

I&M Close Out Report from Whitechapel Station to Liverpool Street Station (Drive Y)

CRL Document Number: C305-DSJ-C2-RGN-CRG03-50406

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 SR LO For information
 DLR Other: _____

This document has been reviewed by the following individual for coordination, compliance, integration and acceptance and is acceptable for transmission to the above stakeholder for the above stated purpose.

Sign: _____ Role: _____ Name: _____ Date: _____
 Sign: _____ Role: _____ Name: _____ Date: _____

2b. Review by Stakeholder (if required):

Stakeholder Organisation	Job Title	Name	Signature	Date	Acceptance
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3. Acceptance by Crossrail:

	Crossrail Review and Acceptance Decal	
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GEOCISA UK	C305-GEO-COR-10_3-160329				
I&M CLOSE OUT REPORT FROM WITHECHAPEL STATION TO LIVERPOOL STREET STATION(DRIVE Y) C305-DSJ-C2-RGN-CRG03-50406 Rev 2.0					
C305 Crossrail Eastern Running Tunnels					
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APPENDIX A: INSTRUMENT LOCATION

APPENDIX B: SUMMARY OF INSTRUMENTATION INSTALLED ON SITE

APPENDIX C: MINUTES CLOSE OUT MEETING AREA 10

APPENDIX D: DEFLECTION RATIO

APPENDIX E: 19 PRINCELET STREET

1. CLOSE OUT REPORT PURPOSE

As stated in the specification: C122-OVE-Z4-RSP-CR001-00007 Rev 7.0, the purpose of this close-out report is to summarize the data from the instrumentation included in this document and to relate the recorded movements to the construction activities which produce any observed change.

This report covers the effect of the C305 bored machines as well as the excavation and depressurisation/dewatering activities of cross passage 6 and 8 (CP6 and CP8). The report does not consider impacts from other Crossrail contracts and other third party site works.

Apart from post-dewatering and Cross passage monitoring for CP6 and CP8, the long term readings included in this report do not cover the specified full monitoring period of 12 months as the contractor was instructed to stop all long term monitoring post TBM transit and Crossrail has informed DSJV that the long term monitoring will be undertaken by satellite radar interferometry (see PMI C305_PMI_1087).

2. LOCATION OF THE WORKS

The instrumentation included within this report is situated within Area 10, Whitechapel Station to Liverpool Street Station, along project chainage 77700 to 79350. The instrumentation has been installed in the vicinity of the tunnels' alignments.

See appendix A for the instrument location.

3. DOCUMENTATION SUMMARY

CROSSRAIL NUMBER	DOCUMENT NAME	REASON FOR ISSUE
C305-DSJ-C2-GMS-CR094_PT002-50021 Rev 1.0 Code 4	Method Statement I&M Shallow Datum from Whitechapel Station to Liverpool St station	Method Statement
C305-DSJ-C2-GMS-CR094_PT002-50022 Rev 1.0 Code 4	TBM Boreholes Section A1&A1 Spelman Street & Daplyn Street	Method Statement
C305-DSJ-C2-GMS-CR143-50015 Rev 1.0 Code 1	I&M Studs Installation & Monitoring from Whitechapel to Liverpool Street Station	Method Statement
14-01-14 C305-DSJ-C2-GMS-CR143-50016 Rev 2.0 Code 1	I&M Sockets/prisms Installation & Monitoring from Whitechapel to Liverpool Street Station	Method of Statement
C305-DSJ-C2-STP-CRG03-50013 Rev 2.0 code 1	Work Package Plan for Instrumentation and Monitoring Sockets & Prisms at Liverpool Street Station	Work Package Plan
C305-DSJ-C2-RGN-CRG03-50392 Rev 1.0	I&M Installation Report from Whitechapel Station to Liverpool Street (Drive Y)	Installation Report

4. SUMMARY OF INSTALLED INSTRUMENTATION ON SITE

The total number of instruments installed, as per method statement and C122 drawings and further modification by RFIs below, comprises:

- Shallow Datum: 4
- Extensometers: 4
- Inclinometers: 2
- 3D prisms: 72
- Sockets: 251
- Levelling points: 612

Detailed information of the installed instrumentation is reported in appendix B. The average commissioning readings included in appendix B have been used to calculate the relative movements provided in the graphs of this report.

5. CONSTRUCTION ACTIVITY

TBM PASSAGE

DRIVE Y	RINGS	PROJECT CHAINAGE	DATES
Eastbound	2989 – 3907	79200 – 77710	24/10/2014 to 31/01/2015
Westbound	2972– 4007	79350 – 77700	18/11/2014 to 12/03/2015

Slow progress due to screw conveyor repair works:

From Ring 2997 to 3000 (Project chainage 79190) 05/11/2014 to 13/11/2014

Stoppage period

Eastbound Drive-Y:

Ring 3563 (Project chainage 78380) 22/12/2014 to 03/01/2015

Ring 3576 (Project chainage 78360) 05/01/2015 to 07/01/2015

Ring 3797(Project chainage 77900) 20/01/2015 to 22/01/2015

Westbound Drive-Y:

Ring 2983 (Project chainage 79320) 01/12/2014 to 05/12/2014

Ring 3217 (Project chainage 78960) 22/12/2014 to 04/01/2015

Ring 3290 (Project chainage 78840)	07/01/2015 to 10/01/2015
Ring 3299 (Project chainage 78810)	12/01/2015 to 17/01/2015
Ring 4002 (Project chainage 77710)	08/03/2015 to 10/03/2015

The periods of TBM passage and stoppage are related to the rings located close to the instrumentation included in this close out report.

CROSS PASSAGE 6

CP6 construction: 29th March 2015 to 21st May 2015
Sump excavation: 25th May 2015 to 6th June 2015
CP6 depressurisation: 21st February 2015 to 27th June 2015

CROSS PASSAGE 8

CP8 construction: 6th March 2015 to 24th April 2015

6. METHODOLOGY

To determine the settlement rate the following methodology has been used. A Linear Regression has been applied for a defined period using long term readings is recorded after TBM construction. This uses the following formula:

$$b = \frac{\sum_{i=1}^n (X_i - \bar{X}_i) \cdot (Y_i - \bar{Y}_i)}{\sum_{i=1}^n (X_i - \bar{X}_i)^2}$$

Where:

B =gradient or slope

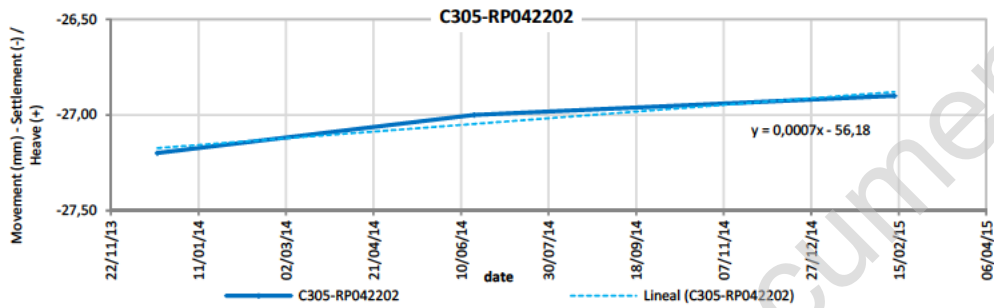
X (independent variable) = date

Y (dependent variable) = vertical movement

Taking into account this calculation, the settlement rate per day can be calculated and therefore, the rate per year obtained (negative value means settlement, positive means heave). For these values, the percentage at or below 2mm/yr will be used to determine the trend of the section/area being considered. Also for comparison, values at or below 3mm/year are presented to highlight that the rate is close to achieving the 2mm/yr. Note the percentages of settlement rate presented in the sections below refer to values rounded to the nearest integer.

One example of this calculation can be seen hereafter for the prism C305-RP042202 and its projection:

	Registered movement (mm)			RATE mm/year
	18/12/2013	17/06/2014	12/02/2015	
C305-RP042202	-27.20	-27.00	-26.90	0.256



CALCULATION - C305-RP042202

X_i	Y_i	$X_i - \bar{X}_i$	$Y_i - \bar{Y}_i$	$(X_i - \bar{X}_i)^2$	$(X_i - \bar{X}_i) \cdot (Y_i - \bar{Y}_i)$
18/12/2013	-27.20	-200.69	-0.17	40275.94	33.448
17/06/2014	-27.00	-19.67	0.03	387.10	-0.656
12/02/2015	-26.90	220.36	0.13	48560.04	29.382

\bar{X}_i	41827.19	
\bar{Y}_i	-27.03	
$\sum_{i=1}^n (X_i - \bar{X}_i)^2$	89223.07	(2)
$\sum_{i=1}^n (X_i - \bar{X}_i) \cdot (Y_i - \bar{Y}_i)$	62.174	(1)
m (SLOPE)	(1)/(2)	0.0007
Rate (mm/year)	m * 365	0.256

7. SUMMARY OF THE DATA

For the purposes of this report the settlement rate calculation has been carried out for a selection of the most representative arrays of levelling points and sockets (see table below). Data for all other instruments has been presented in graphs, with the exception of the 3D prisms and retro-targets. These are not included in the Close out Report due to the nature of the system being less accurate than the sockets which will be illustrated in the report.

As described in the C122 I&M Plan (C122-OVE-C2-RGN-CRG01-50070), for levelling points situated in the vicinity of 3rd party utility assets, deflection ratio values are provided in appendix D.

LEVELLING POINTS			
ARRAY #	CODE	INCLUDE IN COR	NOTE
1	C305-LP100101-113	yes	TRANSECT 10A
2	C305-LP100201-231	yes	TRANSECT 10B
3	C305-LP100301-337	yes	TRANSECT 10C
4	C305-LP100501-528	yes	RATCLIFFE HIGHWAY SEWER
5	C305-LP100401-418	yes	THAMES WATER ASSET WITH SETTL >10mm
6	C305-LP100601-613	yes	THAMES WATER ASSET WITH SETTL >10mm
7	C305-LP100701-727	yes	TRANSECT 10F
8	C305-LP100801-821	no	THAMES WATER ASSET WITH SETTL <10mm
9	C305-LP100901-935	yes	TRANSECT 10G
10	C305-LP101001-030	yes	TRANSECT 10H
11	C305-LP101101-152	yes	NIGHTINGALE LANE SEWER
12	C305-LP101201-215	no	THAMES WATER ASSET WITH SETTL <10mm
13	C305-LP102402-403	no	
14	C305-LP101401-430	yes	TRANSECT 10I
15	C305-LP101301-355	yes	THAMES WATER ASSET WITH SETTL >10mm
16	C305-LP101501-520	yes	
17	C305-LP101601-618	yes	TRANSECT 10J - ABOVE CP6
18	C305-LP103101-104	no	
19	C305-LP101701-747	yes	TRANSECT 10K
20	C305-LP101801-827	no	THAMES WATER ASSET WITH SETTL <10mm
21	C305-LP101901-954	yes	TRANSECT 10L
22	C305-LP107001-004	no	
23	C305-LP102001-012	yes	CLOSE TO LIVERPOOL ST STATION
24	C305-LP102101-119	no	THAMES WATER ASSET WITH SETTL <10mm
		71%	LP arrays to be included in the COR
		29%	LP arrays not to be included in the COR

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SOCKETS			
ARRAY #	CODE	INCLUDE IN COR	NOTE
1	C305-LB100101-113	no	
2	C305-LB100201-205	no	
3	C305-LB100301-306	no	
4	C305-LB100401-412	yes	LISTED BUILDING
5	C305-LB100501-506	no	
6	C305-LB100601-607	no	
7	C305-LB100702-712	no	
8	C305-LB100801-803	no	
9	C305-LB100901-906	no	
10	C305-LB101001-007	no	
10A	C305-LB101101-102	no	
11	C305-LB101201-215	yes	ABOVE CP8
12	C305-LB101301-305	no	
13	C305-LB101401-403	no	
14	C305-LB101501-502	no	
15	C305-LB101601-611	no	
16	C305-LB101701-721	yes	LISTED BUILDING
17	C305-LB101801-814	yes	LISTED BUILDING
18	C305-LB102001-010	yes	LISTED BUILDING
19	C305-LB102101-1110	yes	LISTED BUILDING
20	C305-LB101901-910	yes	SIGNIFICANT BUILDING
21	C305-LB102201-222	yes	LISTED BUILDING
22	C305-LB102301-303	no	
23	C305-LB102401-405	no	
24	C305-LB102501-503	no	
25	C305-LB102701-704	yes	LISTED BUILDING
26	C305-LB102603-607	yes	LISTED BUILDING
27	C305-LB102801-805	yes	LISTED BUILDING
28	C305-LB103001-004	no	
29	C305-LB103101-113	no	
30	C305-LB103301-310	yes	LISTED BUILDING
31	C305-LB103201-202	yes	LISTED BUILDING
32	C305-LB103501-507	no	
33	C305-LB103403-404	yes	LISTED BUILDING
34	C305-LB103701-715	yes	LISTED BUILDING
35	C305-LB103801-802	no	
36	C305-LB103908-909	no	
37	C305-LB104001-008	yes	LISTED BUILDING
		42%	LB arrays to be included in the COR
		58%	LB arrays not to be included in the COR

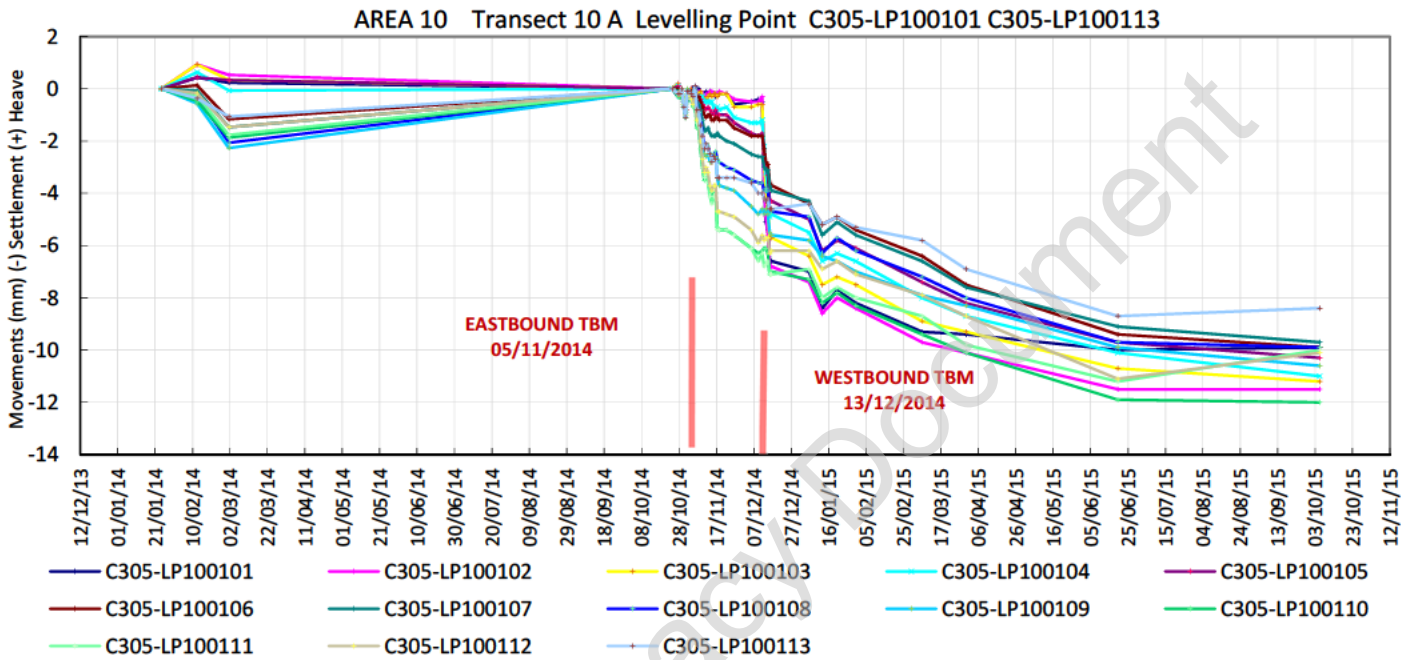
Note: LPs 100101-113 were affected by site works by others, Crossrail C510.

As described in the C122 I&M Plan (C122-OVE-C2-RGN-CRG01-50070), for levelling points situated in the vicinity of 3rd party utility assets, deflection ratio values are provided in appendix D.

Note: For the following data plots #N/A refers to instances where readings were not taken for that sensor (e.g. damaged sensor, not access, etc)

LEVELLING POINTS

C305-LP100101-C305-LP100113



The graph above shows a maximum settlement of -7 mm after the eastbound TBM transit and a total maximum settlement of -12 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

The table below shows the annual rate for the levelling points in this array.

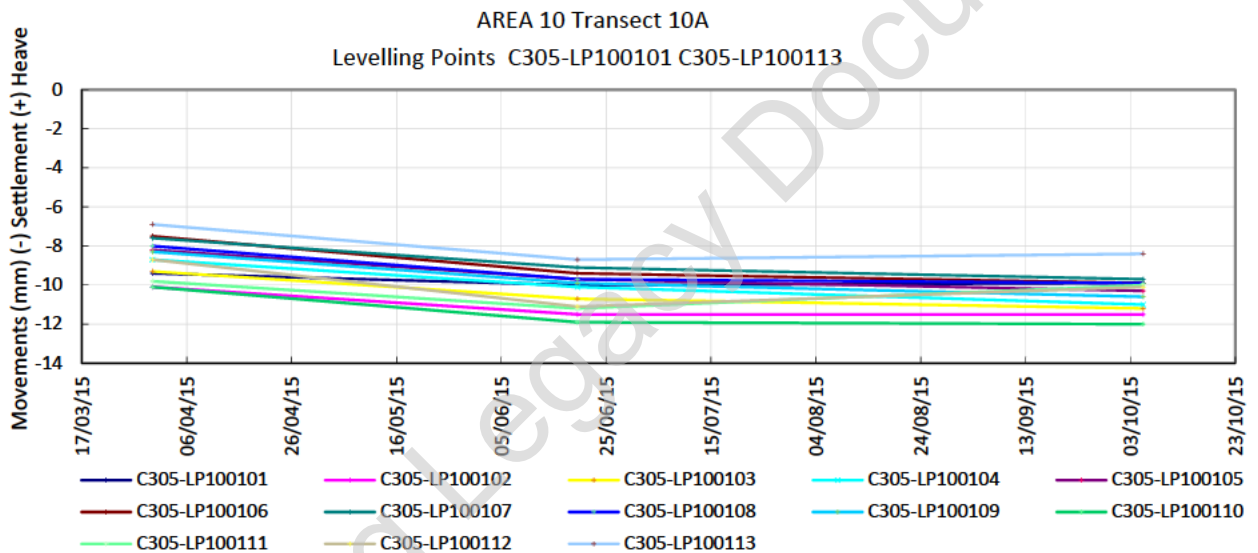
	Registered movement (mm)			mm/year
	30/03/2015	19/06/2015	05/10/2015	
C305-LP100101	-9.40	-10.00	-9.90	-0.896
C305-LP100102	-10.10	-11.50	-11.50	-2.558
C305-LP100103	-9.30	-10.70	-11.20	-3.563
C305-LP100104	-8.70	-10.10	-11.00	-4.366
C305-LP100105	-8.20	-9.70	-10.30	-3.947
C305-LP100106	-7.50	-9.40	-9.90	-4.477
C305-LP100107	-7.60	-9.10	-9.70	-3.947
C305-LP100108	-8.00	-9.70	-9.90	-3.508
C305-LP100109	-8.30	-9.90	-10.60	-4.330
C305-LP100110	-10.10	-11.90	-12.00	-3.490
C305-LP100111	-9.80	-11.20	-10.00	-0.148
C305-LP100112	-8.70	-11.10	-10.10	-2.377

	Registered movement (mm)			mm/year
	30/03/2015	19/06/2015	05/10/2015	
C305-LP100113	-6.90	-8.70	-8.40	-2.687
	Rate less than -2.5 mm/year		% less 2 mm/ year	23%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	46%

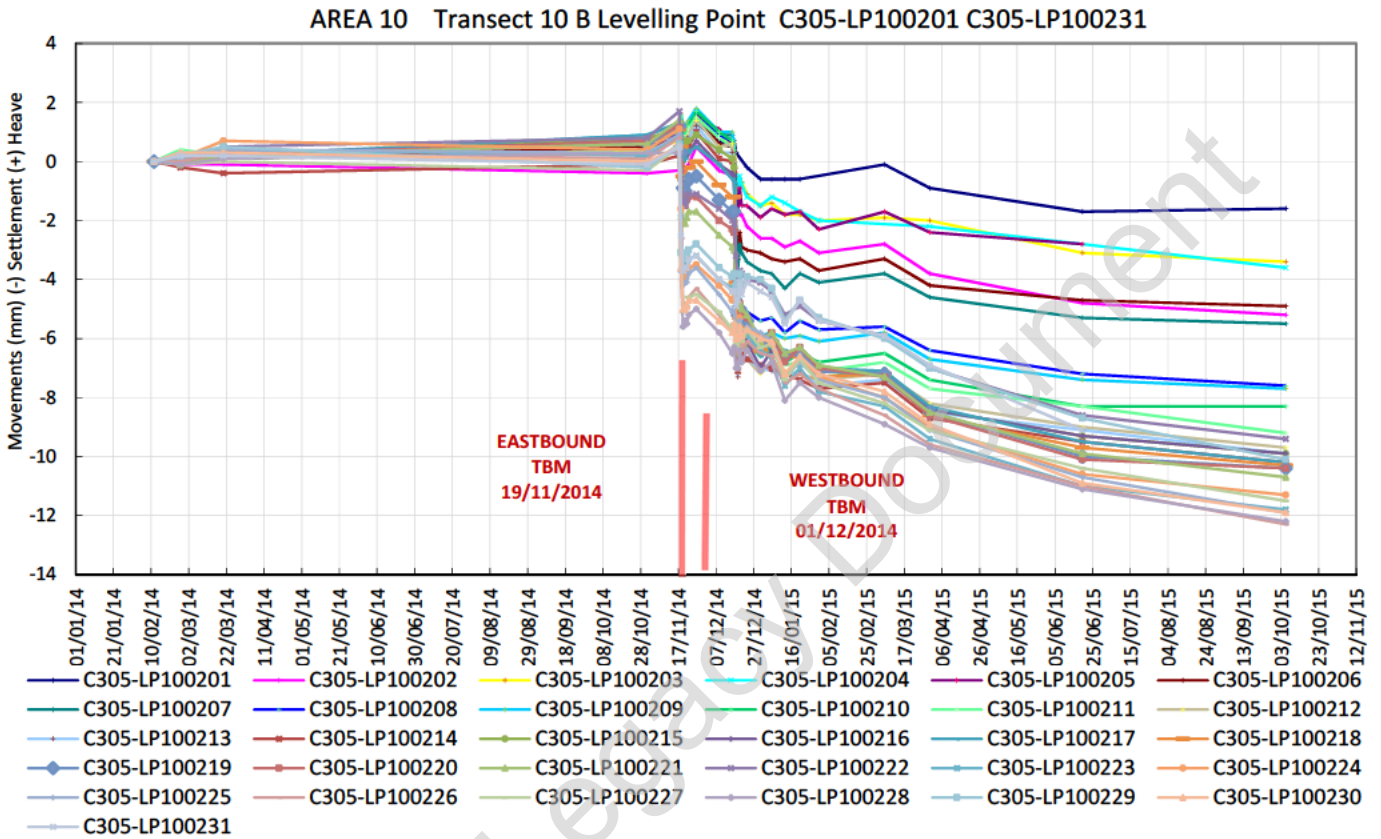
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 23%, whereas 46% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP100201-C305-LP100231



The graph above shows a maximum settlement of -6 mm after the eastbound TBM transit and a total maximum settlement of -12 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

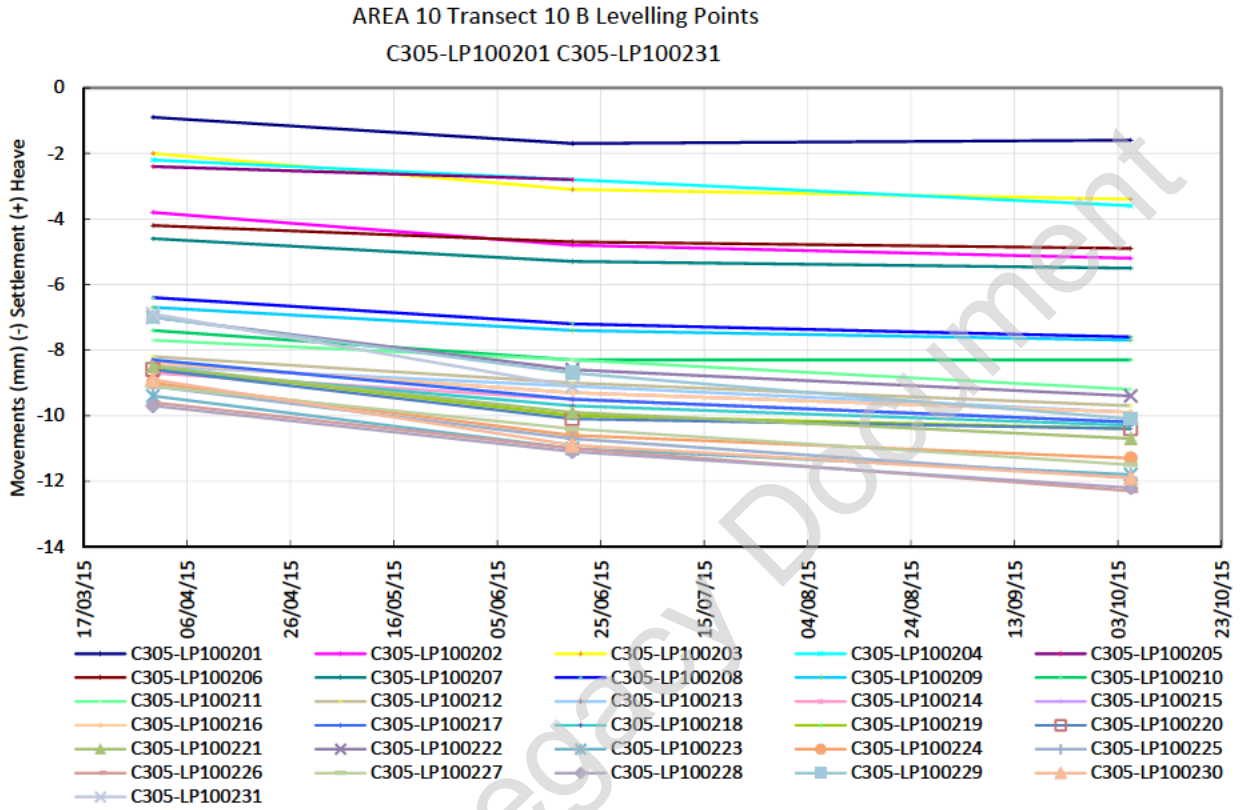
The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year
	30/03/2015	19/06/2015	05/10/2015	
C305-LP100201	-0.90	-1.70	-1.60	-1.260
C305-LP100202	-3.80	-4.80	-5.20	-2.630
C305-LP100203	-2.00	-3.10	-3.40	-2.612
C305-LP100204	-2.20	#N/A	-3.60	-2.703
C305-LP100205	-2.40	-2.80	#N/A	-1.800
C305-LP100206	-4.20	-4.70	-4.90	-1.315
C305-LP100207	-4.60	-5.30	-5.50	-1.680
C305-LP100208	-6.40	-7.20	-7.60	-2.265
C305-LP100209	-6.70	-7.40	-7.70	-1.881
C305-LP100210	-7.40	-8.30	-8.30	-1.644
C305-LP100211	-7.70	-8.30	-9.20	-2.904
C305-LP100212	-8.20	-9.00	-9.70	-2.867
C305-LP100213	-8.50	-9.10	-9.90	-2.703
C305-LP100214	-8.70	-9.50	-10.20	-2.867
C305-LP100215	-8.40	-9.30	-9.90	-2.849
C305-LP100216	-8.40	-9.30	-9.90	-2.849
C305-LP100217	-8.30	-9.50	-10.20	-3.598
C305-LP100218	-8.60	-9.70	-10.30	-3.214
C305-LP100219	-8.50	-10.00	-10.40	-3.543
C305-LP100220	-8.60	-10.10	-10.40	-3.342
C305-LP100221	-8.50	-9.90	-10.70	-4.164
C305-LP100222	-7.00	-8.60	-9.40	-4.529
C305-LP100223	-9.40	-11.00	-11.80	-4.529
C305-LP100224	-9.00	-10.60	-11.30	-4.328
C305-LP100225	-9.10	-10.70	-11.90	-5.333
C305-LP100226	-9.60	-11.00	-12.30	-5.168
C305-LP100227	-9.10	-10.40	-11.50	-4.584
C305-LP100228	-9.70	-11.10	-12.20	-4.767
C305-LP100229	-7.00	-8.70	-10.10	-5.917
C305-LP100230	-8.90	-10.90	-11.90	-5.662
C305-LP100231	-6.90	-9.10	#N/A	#N/A
	Rate less than -2.5 mm/year		% less 2 mm/ year	23%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	60%

Note: All the movements are in mm. (-) Settlement / (+) Heave

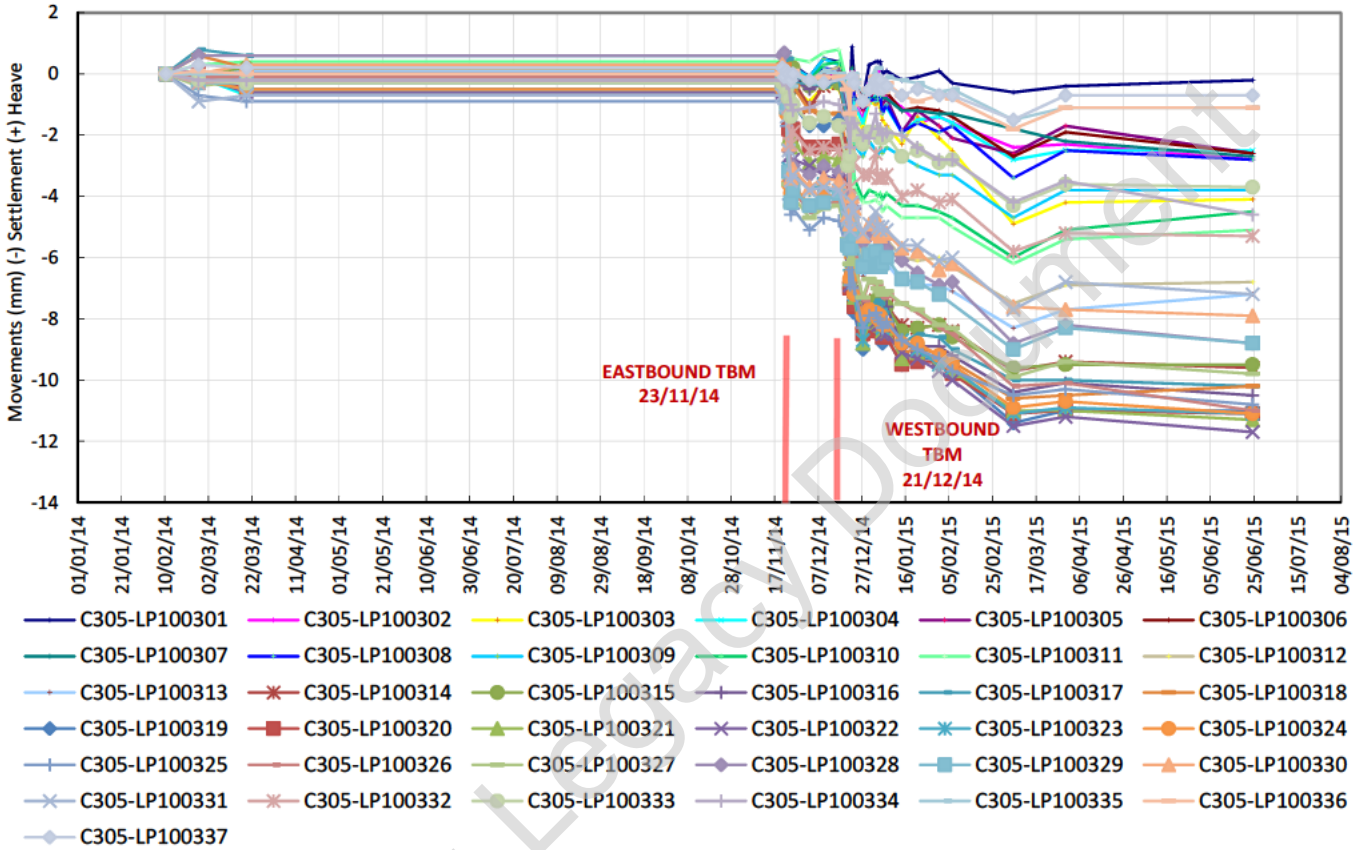
The percentage of levelling points with a settlement rate less than 2 mm/year is 23%, whereas 60% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP100301-C305-LP100337

AREA 10 Transect 10 C Levelling Point C305-LP100301 C305-LP100337



The graph above shows a maximum settlement of -5 mm after the eastbound TBM transit and a total maximum settlement of -12 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

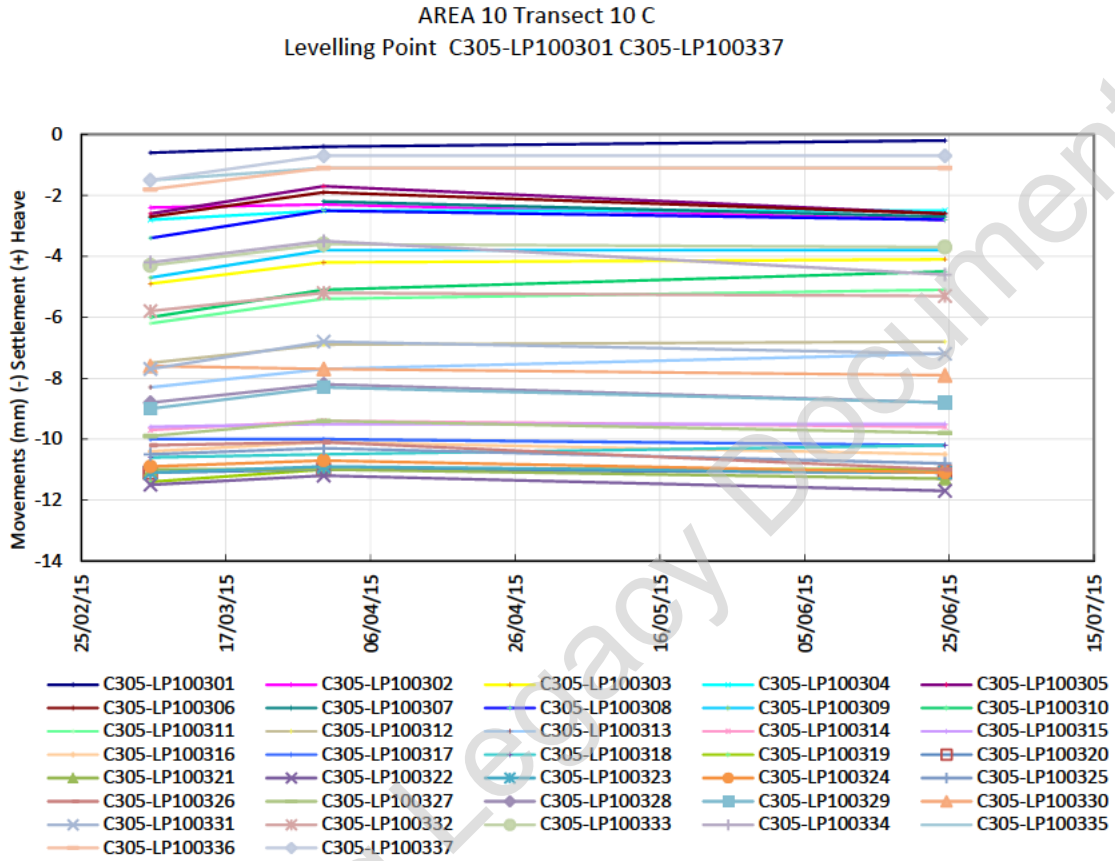
The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year	
	06/03/2015	30/03/2015	24/06/2015		
C305-LP100301	-0.60	-0.40	-0.20	1.202	
C305-LP100302	-2.40	-2.30	-2.80	-1.541	
C305-LP100303	-4.90	-4.20	-4.10	2.065	
C305-LP100304	-2.80	-2.50	-2.50	0.732	
C305-LP100305	-2.60	-1.70	-2.60	-1.017	
C305-LP100306	-2.70	-1.90	-2.60	-0.547	
C305-LP100307	#N/A	-2.20	-2.70	#N/A	
C305-LP100308	-3.40	-2.50	-2.80	1.125	
C305-LP100309	-4.70	-3.80	-3.80	2.196	
C305-LP100310	-6.00	-5.10	-4.50	4.338	
C305-LP100311	-6.20	-5.40	-5.10	3.023	
C305-LP100312	-7.50	-6.90	-6.80	1.821	
C305-LP100313	-8.30	-7.70	-7.20	3.249	
C305-LP100314	-9.70	-9.40	-9.60	0.018	
C305-LP100315	-9.60	-9.50	-9.50	0.244	
C305-LP100316	-10.40	-10.10	-10.50	-0.696	
C305-LP100317	-10.00	-10.00	-10.20	-0.714	
C305-LP100318	-10.60	-10.50	-10.20	1.315	
C305-LP100319	-11.40	-11.00	-11.00	0.976	
C305-LP100320	-11.10	-11.00	-11.10	-0.113	
C305-LP100321	-11.00	-11.00	-11.30	-1.071	
C305-LP100322	-11.50	-11.20	-11.70	-1.053	
C305-LP100323	-11.10	-10.90	-11.10	-0.226	
C305-LP100324	-10.90	-10.70	-11.10	-0.940	
C305-LP100325	-10.50	-10.30	-10.80	-1.297	
C305-LP100326	-10.20	-10.10	-11.00	-2.969	
C305-LP100327	-9.90	-9.40	-9.80	-0.208	
C305-LP100328	-8.80	-8.20	-8.80	-0.678	
C305-LP100329	-9.00	-8.30	-8.80	-0.077	
C305-LP100330	-7.60	-7.70	-7.90	-0.958	
C305-LP100331	-7.70	-6.80	-7.20	0.768	
C305-LP100332	-5.80	-5.20	-5.30	1.107	
C305-LP100333	-4.30	-3.60	-3.70	1.351	
C305-LP100334	-4.20	-3.50	-4.60	-2.219	
C305-LP100335	-1.50	-1.10	-1.10	0.976	
C305-LP100336	-1.80	-1.10	-1.10	1.708	
C305-LP100337	-1.50	-0.70	-0.70	1.952	
	Rate less than -2.5 mm/year			% less 2 mm/ year	97%
	Rate greater than -3.5 mm/year			% less 3 mm/ year	100%

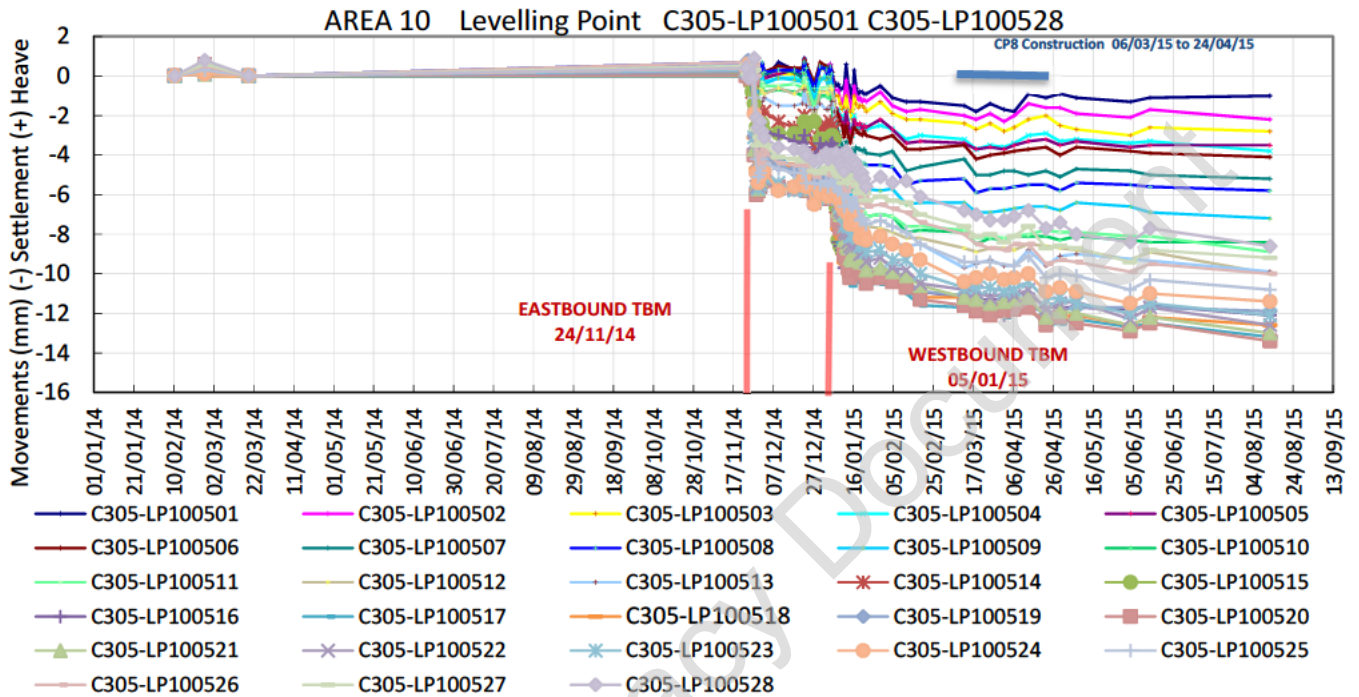
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 97%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP100501-C305-LP100528



The graph above shows a maximum settlement of -7 mm after the eastbound TBM transit and a total maximum settlement of -13 mm after the CP8 construction and the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

The table below shows the annual rate for the levelling points in this array.

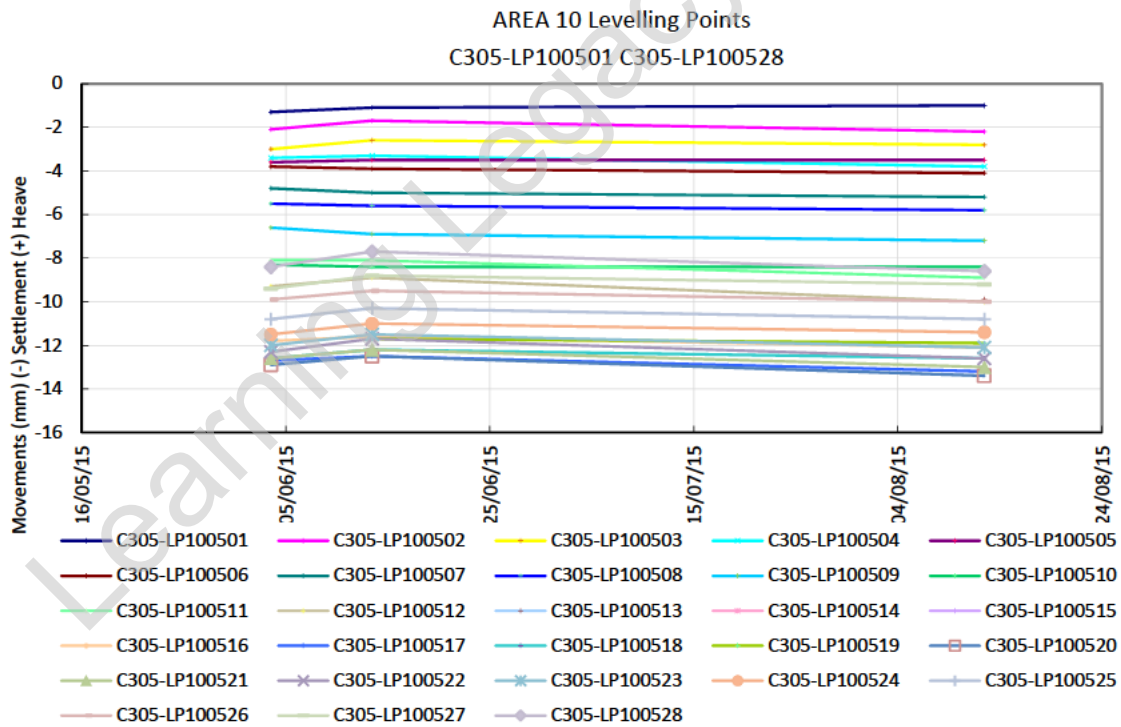
	Registered movement (mm)			mm/year
	03/06/2015	13/06/2015	12/08/2015	
C305-LP100501	-1.30	-1.10	-1.00	1.231
C305-LP100502	-2.10	-1.70	-2.20	-1.403
C305-LP100503	-3.00	-2.60	-2.80	0.253
C305-LP100504	-3.40	-3.30	-3.80	-2.421
C305-LP100505	-3.60	-3.50	-3.50	0.339
C305-LP100506	-3.80	-3.90	-4.10	-1.443
C305-LP100507	-4.80	-5.00	-5.20	-1.783
C305-LP100508	-5.50	-5.60	-5.80	-1.443
C305-LP100509	-6.60	-6.90	-7.20	-2.674
C305-LP100510	-8.30	-8.40	-8.40	-0.339
C305-LP100511	-8.10	-8.10	-8.90	-4.417
C305-LP100512	-9.30	-8.90	-10.00	-4.716
C305-LP100513	#N/A	#N/A	-9.90	#N/A
C305-LP100514	#N/A	#N/A	#N/A	#N/A

	Registered movement (mm)			mm/year
	03/06/2015	13/06/2015	12/08/2015	
C305-LP100515	#N/A	#N/A	#N/A	#N/A
C305-LP100516	-11.80	-11.60	-12.10	-2.082
C305-LP100517	-12.70	-12.50	-13.20	-3.186
C305-LP100518	-12.60	-12.20	-12.60	-0.851
C305-LP100519	#N/A	-11.70	-11.90	#N/A
C305-LP100520	-12.90	-12.50	-13.40	-3.612
C305-LP100521	-12.60	-12.20	-13.00	-3.060
C305-LP100522	-12.30	-11.70	-12.60	-2.933
C305-LP100523	-12.00	-11.50	-12.10	-1.616
C305-LP100524	-11.50	-11.00	-11.40	-0.512
C305-LP100525	-10.80	-10.30	-10.80	-1.064
C305-LP100526	-9.90	-9.50	-10.00	-1.403
C305-LP100527	-9.40	-8.80	-9.20	-0.173
C305-LP100528	-8.40	-7.70	-8.60	-2.594
	Rate less than -2.5 mm/year		% less 2 mm/ year	67%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	88%

Note: All the movements are in mm. (-) Settlement / (+) Heave

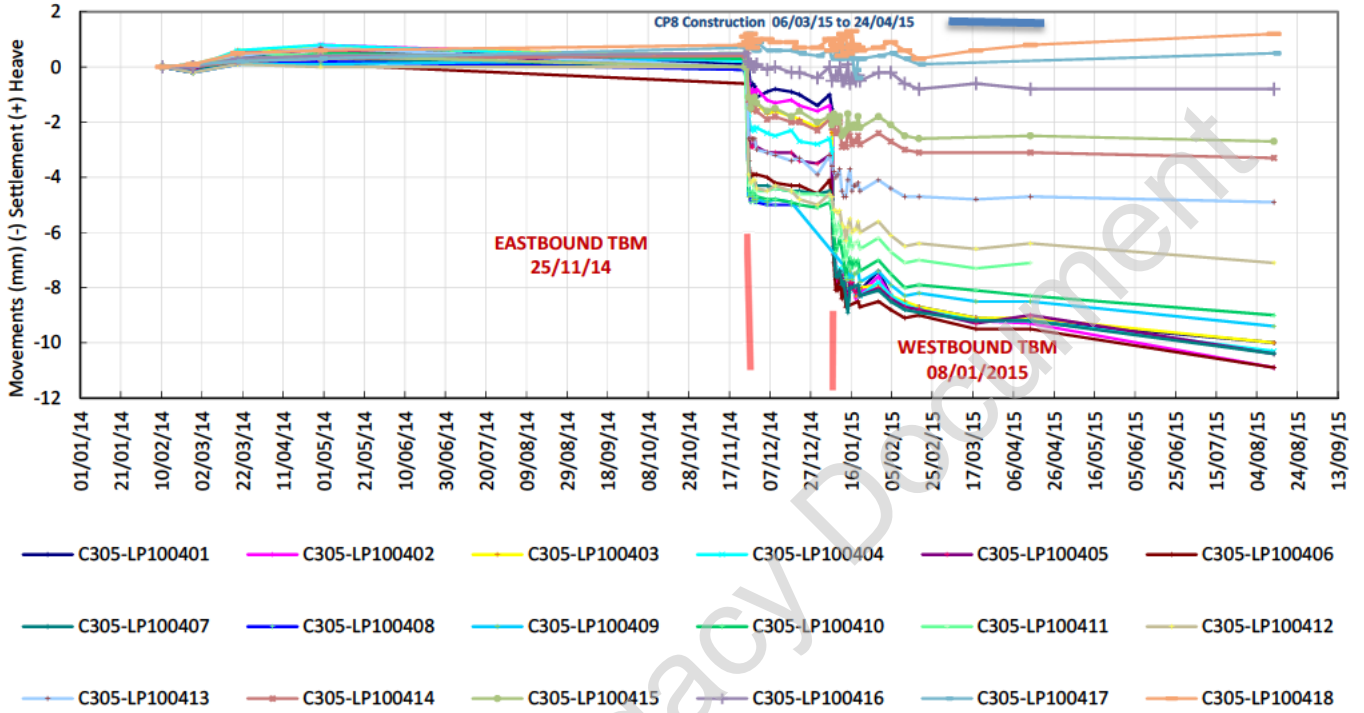
The percentage of levelling points with a settlement rate less than 2 mm/year is 67%, whereas 88% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP100401-C305-LP100418

AREA 10 Transect 10 D Levelling Point C305-LP100401 C305-LP100418



The graph above shows a maximum settlement of -9 mm after the eastbound TBM transit and a total maximum settlement of -11 mm after CP8 works and the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

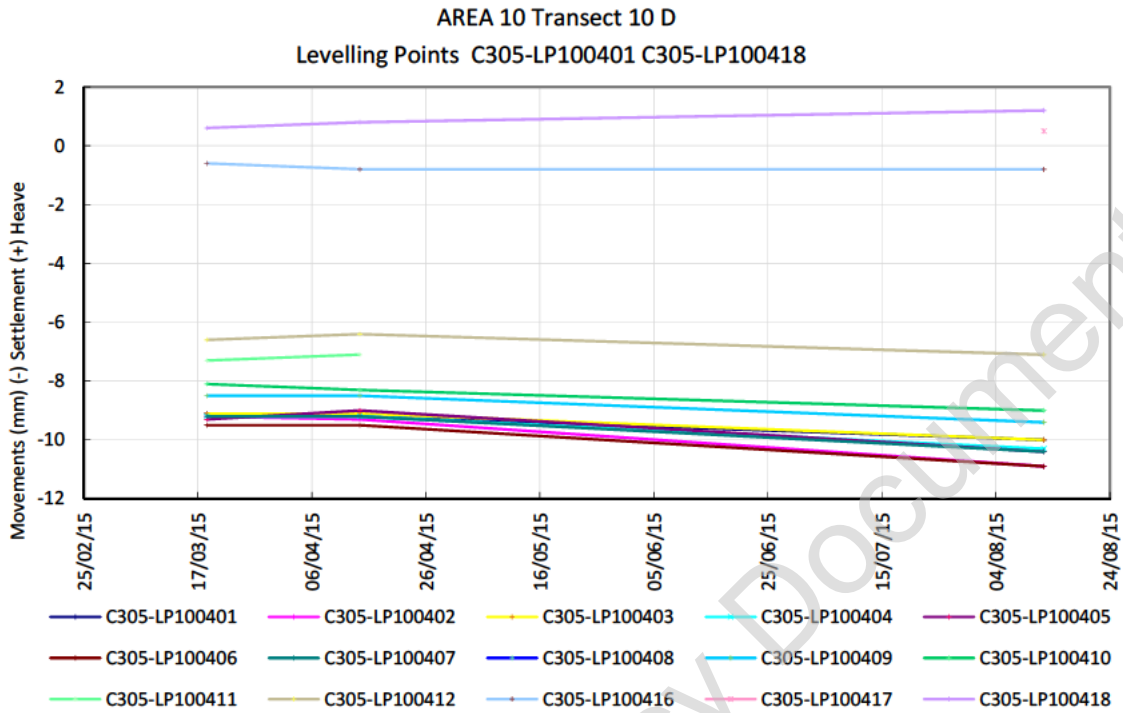
The table below shows the annual rate for the levelling points in this array.

				mm/year
	18/03/2015	14/04/2015	12/08/2015	
C305-LP100401	-9.10	-9.20	-10.00	-2.296
C305-LP100402	-9.20	-9.30	-10.90	-4.420
C305-LP100403	-9.10	-9.10	-10.00	-2.389
C305-LP100404	-9.20	-9.20	-10.30	-2.920
C305-LP100405	-9.30	-9.00	-10.40	-3.198
C305-LP100406	-9.50	-9.50	-10.90	-3.716
C305-LP100407	-9.20	-9.20	-10.40	-3.185
C305-LP100408	#N/A	#N/A	#N/A	#N/A
C305-LP100409	-8.50	-8.50	-9.40	-2.389
C305-LP100410	-8.10	-8.30	-9.00	-2.204
C305-LP100411	-7.30	-7.10	#N/A	#N/A
C305-LP100412	-6.60	-6.40	-7.10	-1.513
C305-LP100413	-4.80	-4.70	-4.90	-0.358
C305-LP100414	#N/A	-3.10	-3.30	#N/A
C305-LP100415	#N/A	-2.50	-2.70	#N/A
C305-LP100416	-0.60	-0.80	-0.80	-0.346
C305-LP100417	#N/A	#N/A	0.50	#N/A
C305-LP100418	0.60	0.80	1.20	1.407
	Rate less than -2.5 mm/year		% less 2 mm/year	62%
	Rate greater than -3.5 mm/year		% less 3 mm/year	85%

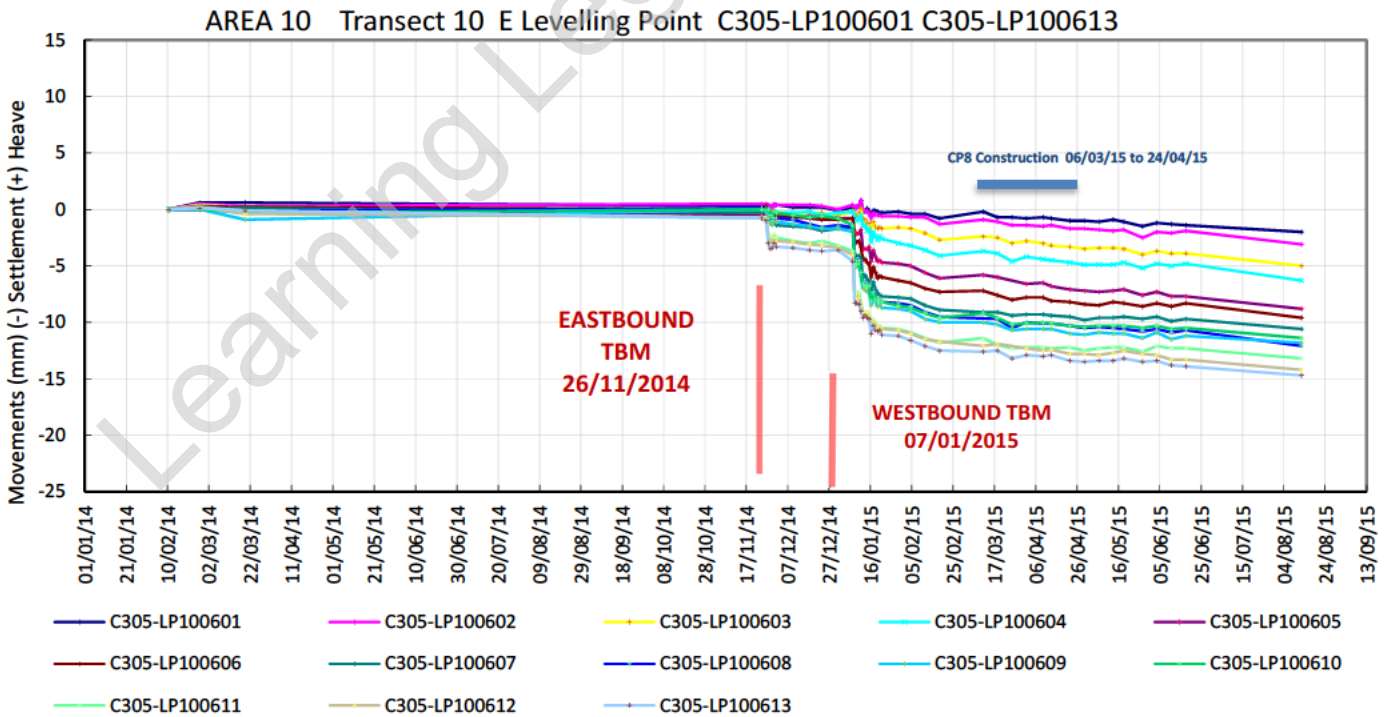
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 62%, whereas 85% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP100601-C305-LP100613



The graph above shows a maximum settlement of -4 mm after the eastbound TBM transit and a total maximum settlement of -15 mm after CP8 works and the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

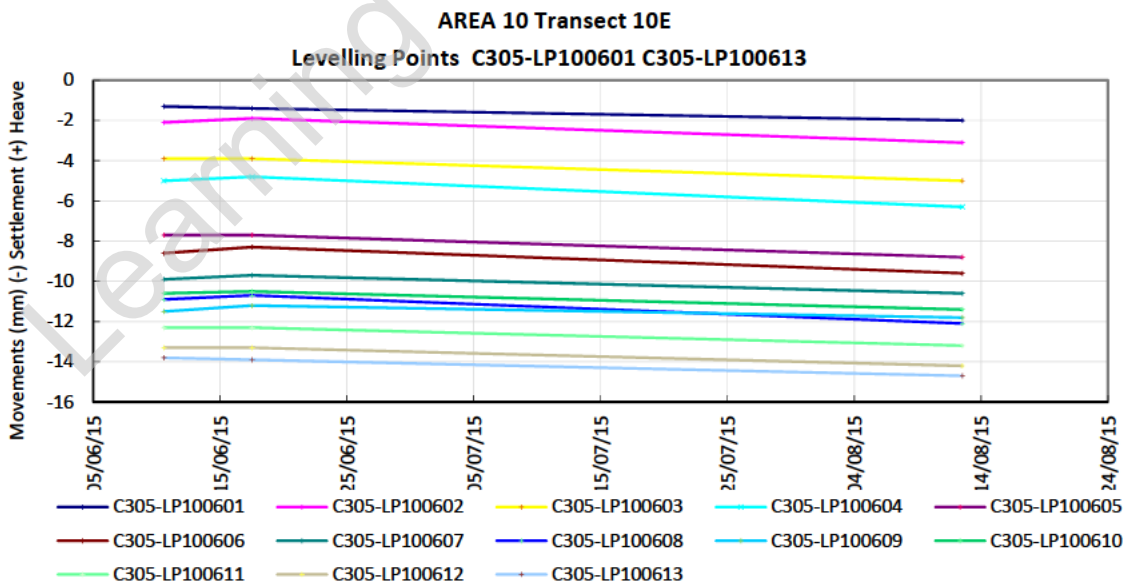
The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year
	10/06/2015	17/06/2015	12/08/2015	
C305-LP100601	-1.30	-1.40	-2.00	-4.002
C305-LP100602	-2.10	-1.90	-3.10	-6.575
C305-LP100603	-3.90	-3.90	-5.00	-6.682
C305-LP100604	-5.00	-4.80	-6.30	-8.397
C305-LP100605	-7.70	-7.70	-8.80	-6.682
C305-LP100606	-8.60	-8.30	-9.60	-6.826
C305-LP100607	-9.90	-9.70	-10.60	-4.753
C305-LP100608	-10.90	-10.70	-12.10	-7.790
C305-LP100609	-11.50	-11.20	-11.80	-2.574
C305-LP100610	-10.60	-10.50	-11.40	-5.110
C305-LP100611	-12.30	-12.30	-13.20	-5.467
C305-LP100612	-13.30	-13.30	-14.20	-5.467
C305-LP100613	-13.80	-13.90	-14.70	-5.216
	Rate less than -2.5 mm/year			0%
	Rate greater than -3.5 mm/year			8%

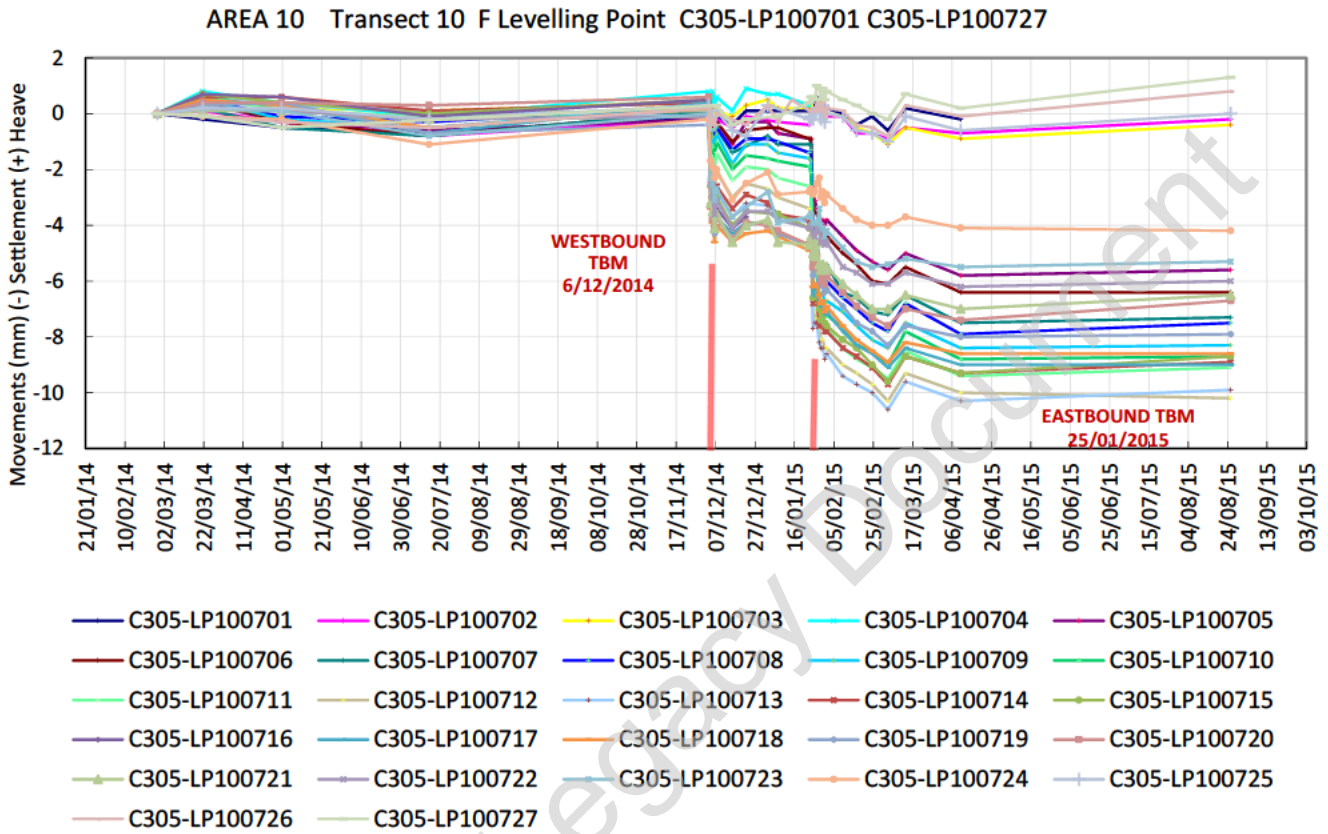
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 0%, whereas 8% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP100701-C305-LP100727



The graph above shows a maximum settlement of -7 mm after the eastbound TBM transit and a total maximum settlement of -11 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

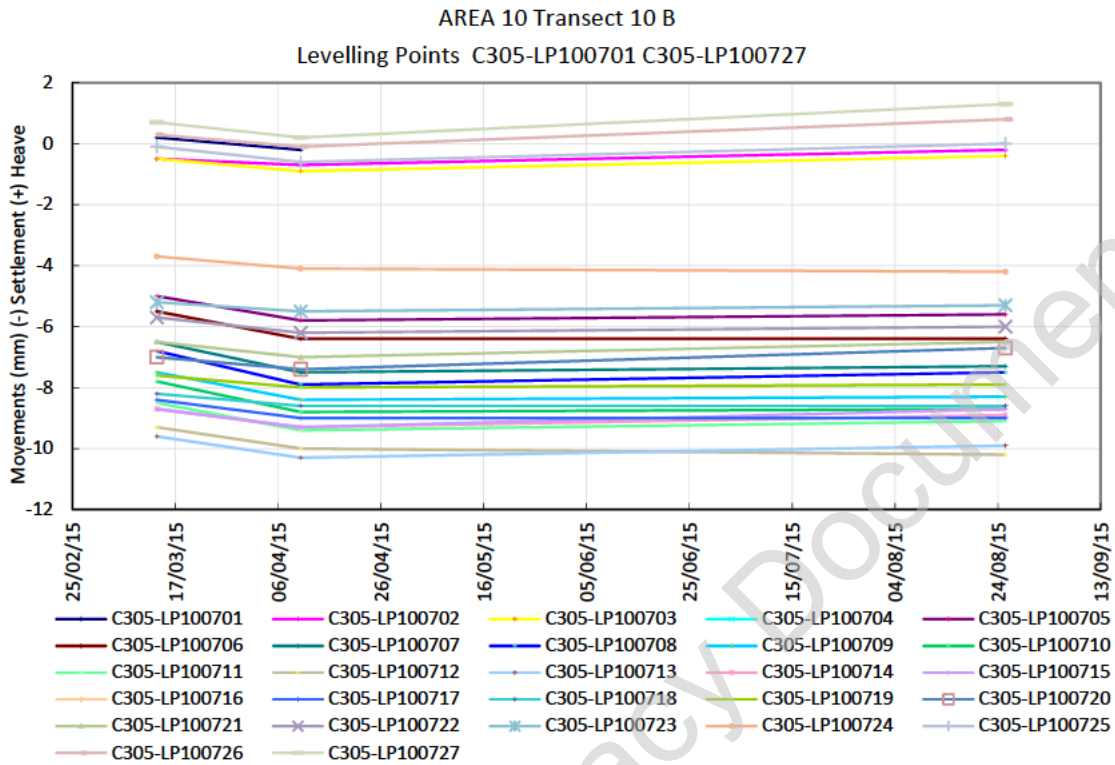
The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year
	13/03/2015	10/04/2015	25/08/2015	
C305-LP100701	0.20	-0.20	#N/A	#N/A
C305-LP100702	-0.50	-0.70	-0.20	0.877
C305-LP100703	-0.50	-0.90	-0.40	0.576
C305-LP100704	#N/A	#N/A	#N/A	#N/A
C305-LP100705	-5.00	-5.80	-5.60	-0.733
C305-LP100706	-5.50	-6.40	-6.40	-1.354
C305-LP100707	-6.50	-7.50	-7.30	-1.034
C305-LP100708	-6.80	-7.90	-7.50	-0.713
C305-LP100709	-7.50	-8.40	-8.30	-1.119
C305-LP100710	-7.80	-8.80	-8.70	-1.269
C305-LP100711	-8.50	-9.40	-9.10	-0.648
C305-LP100712	-9.30	-10.00	-10.20	-1.524
C305-LP100713	-9.60	-10.30	-9.90	-0.111
C305-LP100714	-8.70	-9.30	-8.90	0.039
C305-LP100715	-8.70	-9.30	-8.70	0.510
C305-LP100716	#N/A	#N/A	#N/A	#N/A
C305-LP100717	-8.40	-9.00	-9.00	-0.903
C305-LP100718	-8.20	-8.60	-8.60	-0.602
C305-LP100719	-7.60	-8.00	-7.90	-0.366
C305-LP100720	-7.00	-7.40	-6.70	1.047
C305-LP100721	-6.50	-7.00	-6.50	0.425
C305-LP100722	-5.70	-6.20	-6.00	-0.281
C305-LP100723	-5.20	-5.50	-5.30	0.020
C305-LP100724	-3.70	-4.10	-4.20	-0.837
C305-LP100725	-0.10	-0.60	0.00	0.661
C305-LP100726	0.30	-0.10	0.80	1.518
C305-LP100727	0.70	0.20	1.30	1.839
	Rate less than -2.5 mm/year		% less 2 mm/ year	100%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	100%

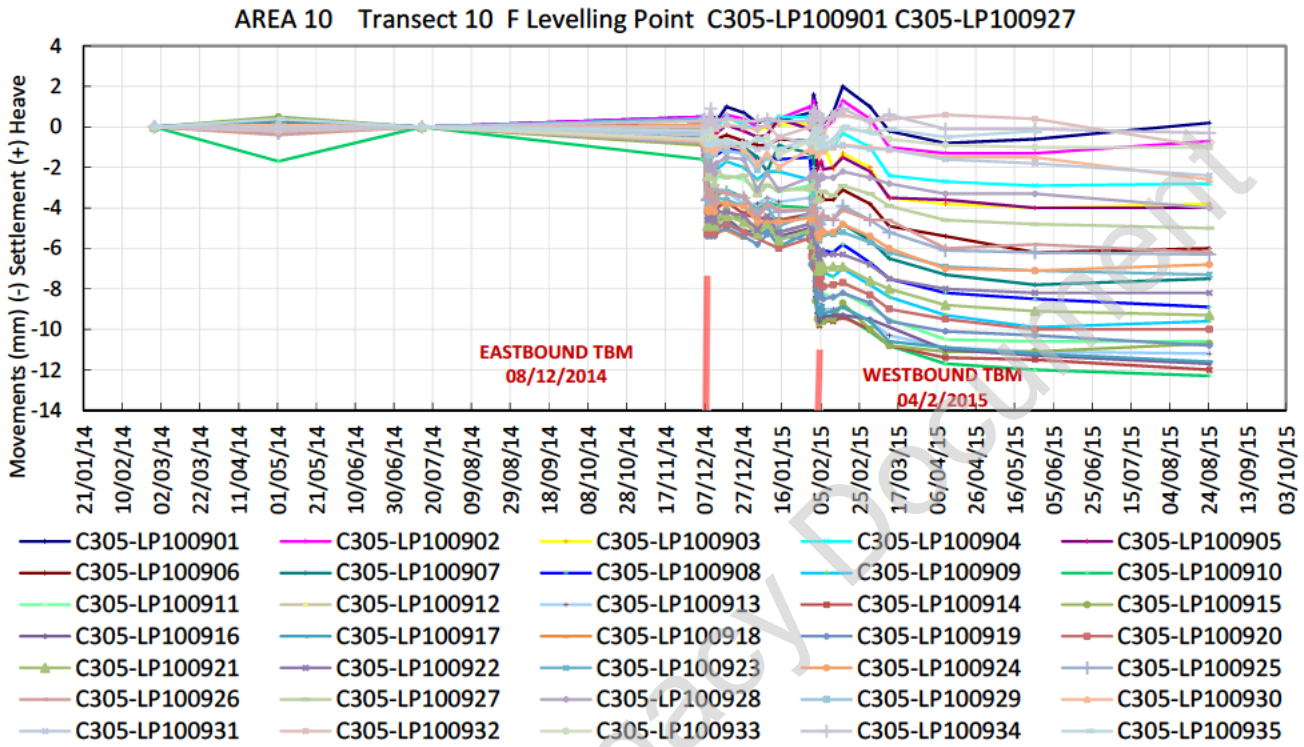
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 100%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP100901-C305-LP100935



The graph above shows a maximum settlement of -10 mm after the eastbound TBM transit and a total maximum settlement of -12 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

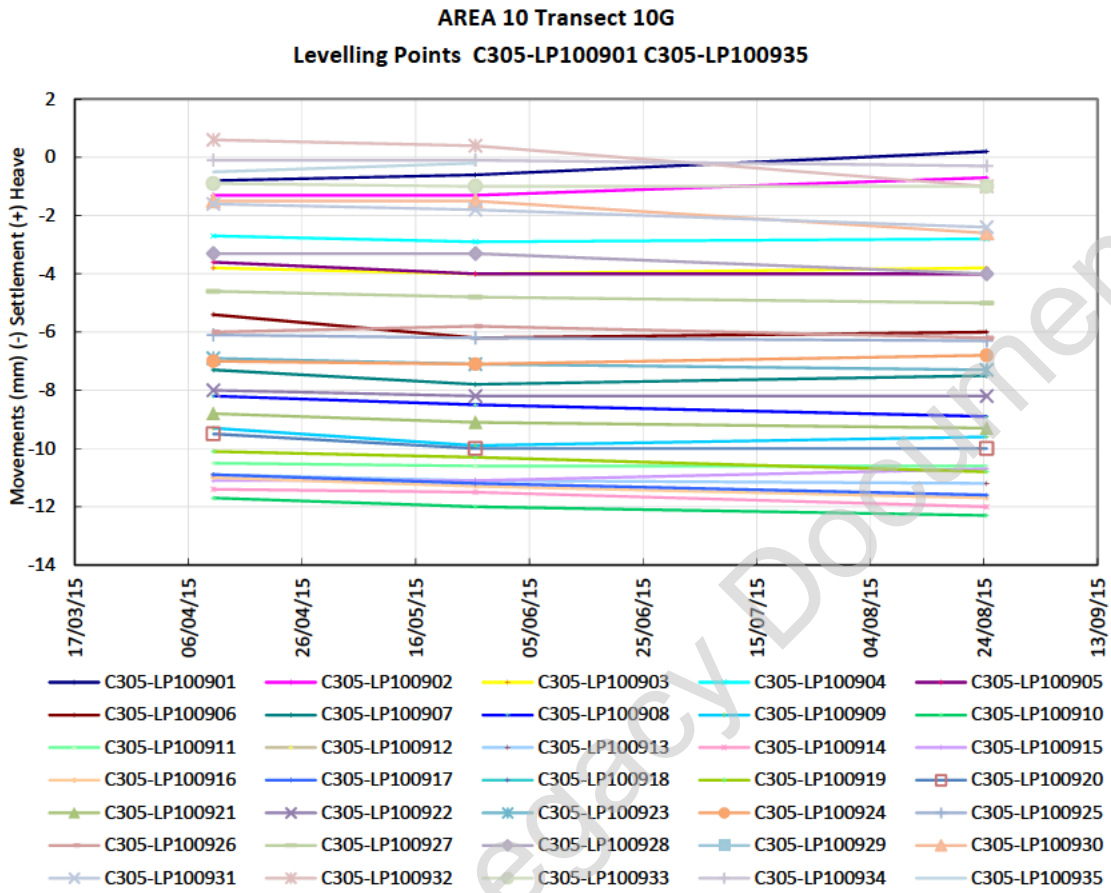
The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year
	10/04/2015	26/05/2015	24/08/2015	
C305-LP100901	-0.80	-0.60	0.20	2.759
C305-LP100902	-1.30	-1.30	-0.70	1.722
C305-LP100903	-3.80	-4.00	-3.80	0.111
C305-LP100904	-2.70	-2.90	-2.80	-0.176
C305-LP100905	-3.60	-4.00	-4.00	-0.925
C305-LP100906	-5.40	-6.20	-6.00	-1.277
C305-LP100907	-7.30	-7.80	-7.50	-0.296
C305-LP100908	-8.20	-8.50	-8.90	-1.842
C305-LP100909	-9.30	-9.90	-9.60	-0.527
C305-LP100910	-11.70	-12.00	-12.30	-1.555
C305-LP100911	-10.50	-10.60	-10.60	-0.231
C305-LP100912	#N/A	#N/A	#N/A	#N/A
C305-LP100913	-10.90	-11.10	-11.20	-0.750
C305-LP100914	-11.40	-11.50	-12.00	-1.667
C305-LP100915	-11.10	-11.10	-10.70	1.148
C305-LP100916	-11.00	-11.30	-11.70	-1.842
C305-LP100917	-10.90	-11.20	-11.60	-1.842
C305-LP100918	#N/A	#N/A	#N/A	#N/A
C305-LP100919	-10.10	-10.30	-10.80	-1.898
C305-LP100920	-9.50	-10.00	-10.00	-1.157
C305-LP100921	-8.80	-9.10	-9.30	-1.268
C305-LP100922	-8.00	-8.20	-8.20	-0.463
C305-LP100923	-6.90	-7.10	-7.30	-1.037
C305-LP100924	-7.00	-7.10	-6.80	0.630
C305-LP100925	-6.10	-6.20	-6.30	-0.518
C305-LP100926	-6.00	-5.80	-6.20	-0.685
C305-LP100927	-4.60	-4.80	-5.00	-1.037
C305-LP100928	-3.30	-3.30	-4.00	-2.009
C305-LP100929	#N/A	#N/A	#N/A	#N/A
C305-LP100930	-1.50	-1.50	-2.60	-3.157
C305-LP100931	-1.60	-1.80	-2.40	-2.185
C305-LP100932	0.60	0.40	-1.00	-4.481
C305-LP100933	-0.90	-1.00	-1.00	-0.231
C305-LP100934	-0.10	-0.10	-0.30	-0.574
C305-LP100935	-0.50	-0.20	#N/A	#N/A
	Rate less than -2.5 mm/year		% less 2 mm/ year	94%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	97%

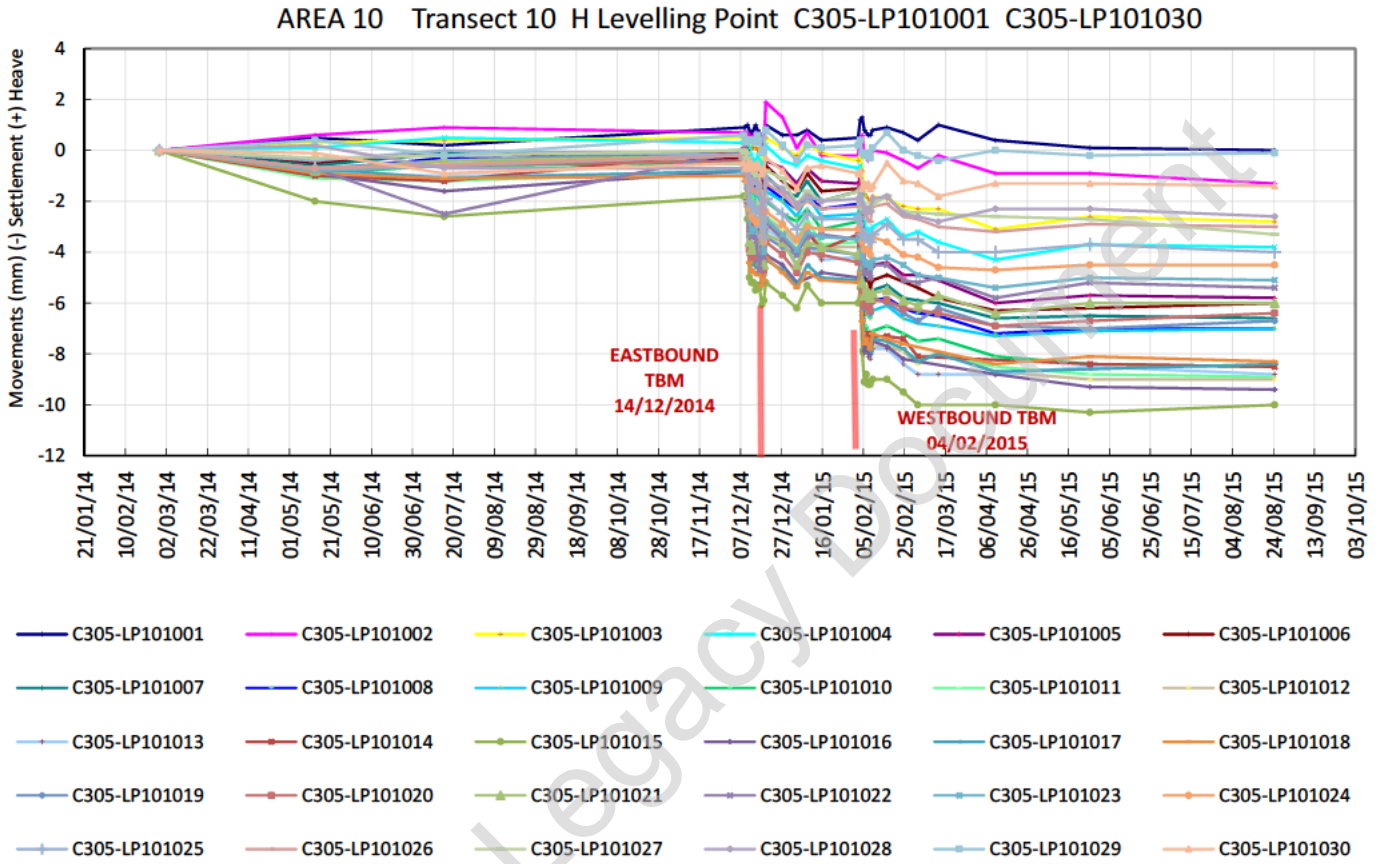
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 94%, whereas 97% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP101001-C305-LP101030



The graph above shows a maximum settlement of -6 mm after the eastbound TBM transit and a total maximum settlement of -10 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

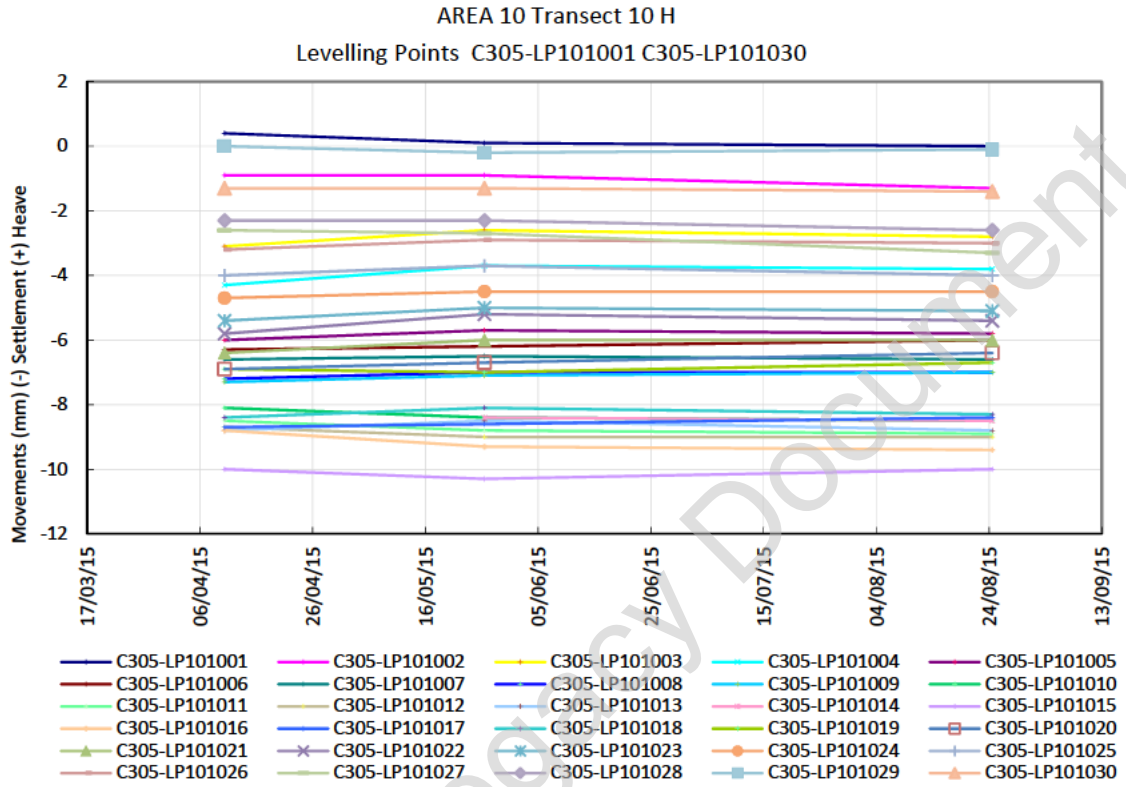
The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year
	10/04/2015	26/05/2015	24/08/2015	
C305-LP101001	0.40	0.10	0.00	-0.980
C305-LP101002	-0.90	-0.90	-1.30	-1.147
C305-LP101003	-3.10	-2.60	-2.80	0.582
C305-LP101004	-4.30	-3.70	-3.80	1.100
C305-LP101005	-6.00	-5.70	-5.80	0.407
C305-LP101006	-6.30	#N/A	-6.00	#N/A
C305-LP101007	-6.60	-6.50	-6.60	-0.056
C305-LP101008	-7.20	-7.00	-7.00	0.462
C305-LP101009	-7.30	-7.10	-7.00	0.749
C305-LP101010	-8.10	-8.40	-8.50	-0.980
C305-LP101011	-8.50	-8.80	-8.90	-0.980
C305-LP101012	-8.70	-9.00	-9.00	-0.693
C305-LP101013	-8.80	-8.50	-8.80	-0.167
C305-LP101014	#N/A	-8.40	-8.50	#N/A
C305-LP101015	-10.00	-10.30	-10.00	0.167
C305-LP101016	-8.80	-9.30	-9.40	-1.443
C305-LP101017	-8.70	-8.60	-8.40	0.805
C305-LP101018	-8.40	-8.10	-8.30	0.120
C305-LP101019	-6.90	-7.00	-6.70	0.629
C305-LP101020	-6.90	-6.70	-6.40	1.323
C305-LP101021	-6.40	-6.00	-6.00	0.925
C305-LP101022	-5.80	-5.20	-5.40	0.813
C305-LP101023	-5.40	-5.00	-5.10	0.638
C305-LP101024	-4.70	-4.50	-4.50	0.462
C305-LP101025	-4.00	-3.70	-4.00	-0.167
C305-LP101026	-3.20	-2.90	-3.00	0.407
C305-LP101027	-2.60	-2.70	-3.30	-1.952
C305-LP101028	-2.30	-2.30	-2.60	-0.861
C305-LP101029	0.00	-0.20	-0.10	-0.175
C305-LP101030	-1.30	-1.30	-1.40	-0.287
	Rate less than -2.5 mm/year		% less 2 mm/ year	100%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	100%

Note: All the movements are in mm. (-) Settlement / (+) Heave

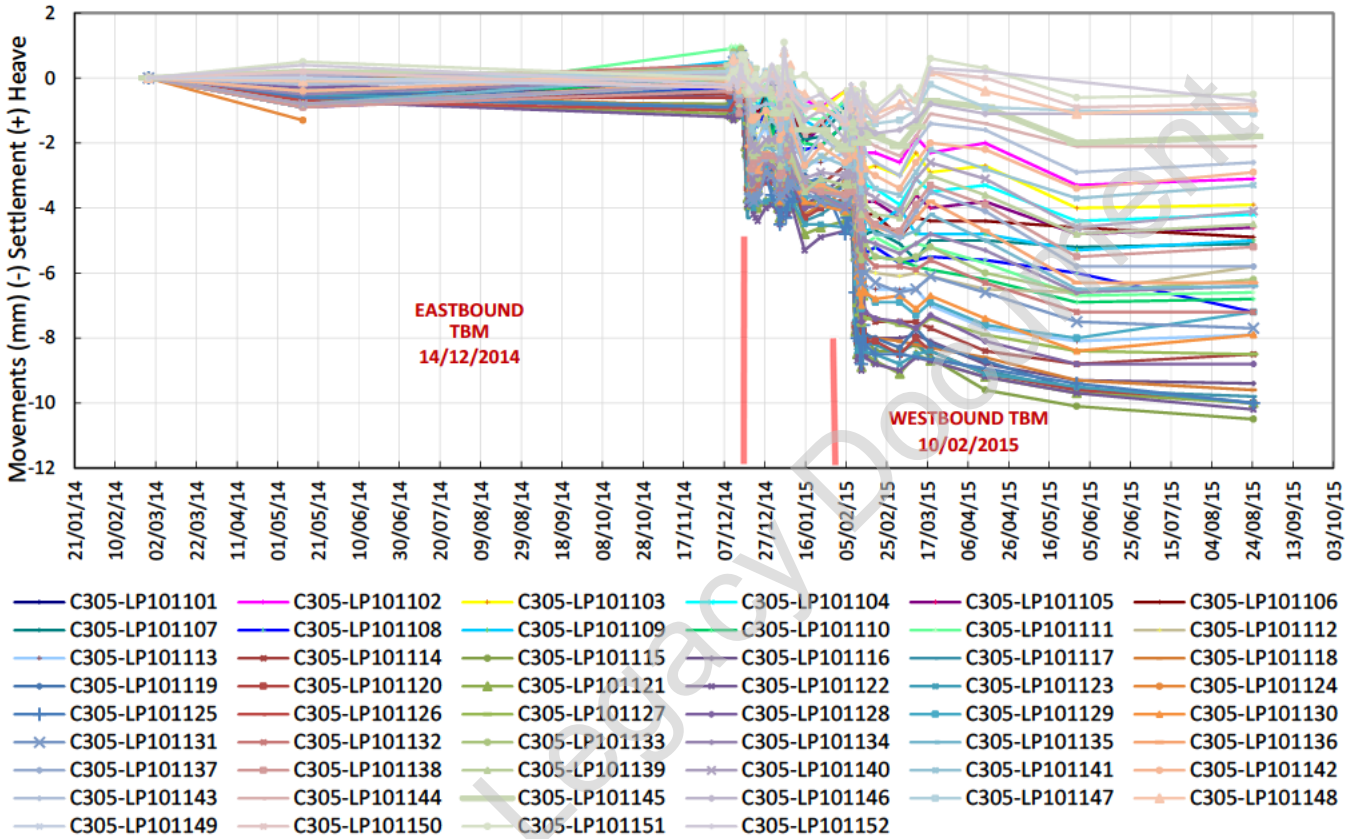
The percentage of levelling points with a settlement rate less than 2 mm/year is 100%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP101101-C305-LP101152

AREA 10 levelling Point C305-LP101101 C305-LP101152



The graph above shows a maximum settlement of -5 mm after the eastbound TBM transit and a total maximum settlement of -10 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year
	14/04/2015	29/05/2015	24/08/2015	
C305-LP101101	#N/A	#N/A	#N/A	#N/A
C305-LP101102	-2.00	-3.30	-3.10	-2.516
C305-LP101103	-2.70	-4.00	-3.90	-2.811
C305-LP101104	-3.30	-4.40	-4.20	-2.038
C305-LP101105	-3.80	-4.80	-4.60	-1.799
C305-LP101106	-4.40	-4.60	-4.90	-1.365
C305-LP101107	-5.00	-5.20	-5.10	-0.182
C305-LP101108	-5.60	-6.00	-7.20	-4.505
C305-LP101109	-4.80	-5.30	-5.00	-0.308

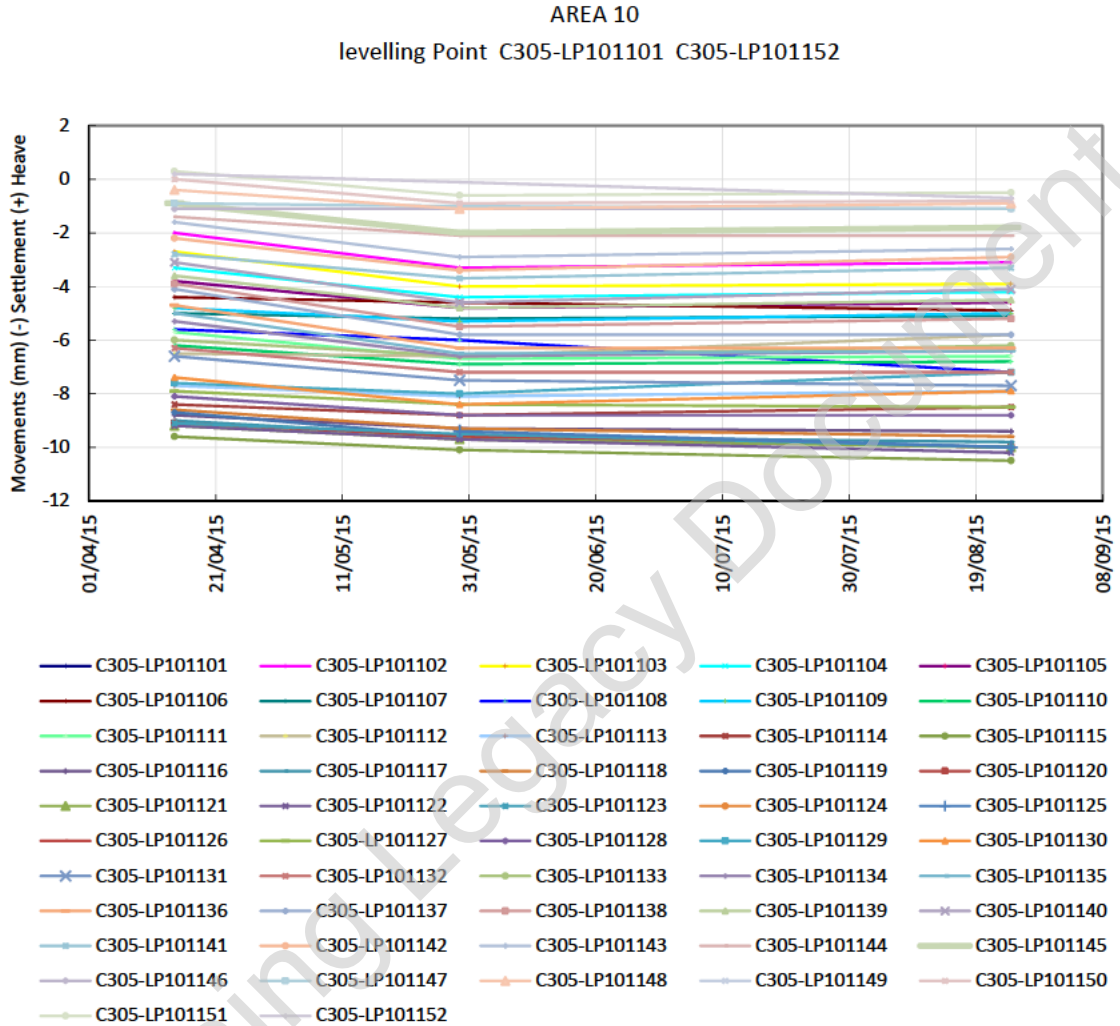
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	Registered movement (mm)			mm/year
	14/04/2015	29/05/2015	24/08/2015	
C305-LP101110	-6.20	-6.90	-6.80	-1.377
C305-LP101111	-5.70	-6.70	-6.60	-2.094
C305-LP101112	-6.50	-6.60	-5.80	2.127
C305-LP101113	-7.70	-8.10	-7.90	-0.365
C305-LP101114	-8.40	-8.80	-8.50	-0.069
C305-LP101115	-9.60	-10.10	-10.50	-2.378
C305-LP101116	-8.80	-9.30	-9.40	-1.491
C305-LP101117	-9.00	-9.60	-9.80	-2.026
C305-LP101118	-8.60	-9.30	-9.60	-2.560
C305-LP101119	-8.70	-9.60	-10.00	-3.334
C305-LP101120	-9.10	-9.60	-10.00	-2.378
C305-LP101121	-9.20	-9.70	-10.00	-2.082
C305-LP101122	-9.20	-9.70	-10.20	-2.674
C305-LP101123	-9.10	-9.50	-10.00	-2.435
C305-LP101124	#N/A	#N/A	#N/A	#N/A
C305-LP101125	#N/A	-9.40	-10.00	#N/A
C305-LP101126	#N/A	#N/A	#N/A	#N/A
C305-LP101127	-7.90	-8.40	-8.50	-1.491
C305-LP101128	-8.10	-8.80	-8.80	-1.673
C305-LP101129	-7.60	-8.00	-7.20	1.410
C305-LP101130	-7.40	-8.40	-7.90	-0.911
C305-LP101131	-6.60	-7.50	-7.70	-2.743
C305-LP101132	-6.30	-7.20	-7.20	-2.151
C305-LP101133	-6.00	-6.60	-6.20	-0.251
C305-LP101134	-5.30	-6.60	-6.40	-2.516
C305-LP101135	-5.00	-6.50	-6.40	-3.289
C305-LP101136	-4.70	-6.30	-6.30	-3.824
C305-LP101137	-4.10	-5.80	-5.80	-4.063
C305-LP101138	-3.90	-5.50	-5.20	-2.937
C305-LP101139	-3.60	-4.80	-4.50	-1.981
C305-LP101140	-3.10	-4.60	-4.10	-2.106
C305-LP101141	-2.80	-3.70	-3.30	-0.968
C305-LP101142	-2.20	-3.40	-2.90	-1.389
C305-LP101143	-1.60	-2.90	-2.60	-2.220
C305-LP101144	-1.40	-2.10	-2.10	-1.673
C305-LP101145	-0.90	-2.00	-1.80	-2.038
C305-LP101146	-1.10	-1.10	-1.10	0.000
C305-LP101147	-0.90	-1.00	-1.10	-0.535
C305-LP101148	-0.40	-1.10	-0.90	-1.082
C305-LP101149	#N/A	#N/A	#N/A	#N/A
C305-LP101150	0.00	-0.90	-0.80	-1.855
C305-LP101151	0.30	-0.60	-0.50	-1.855
C305-LP101152	0.20	#N/A	-0.70	#N/A
	Rate less than -2.5 mm/year		% less 2 mm/ year	74%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	93%

Note: All the movements are in mm. (-) Settlement / (+) Heave

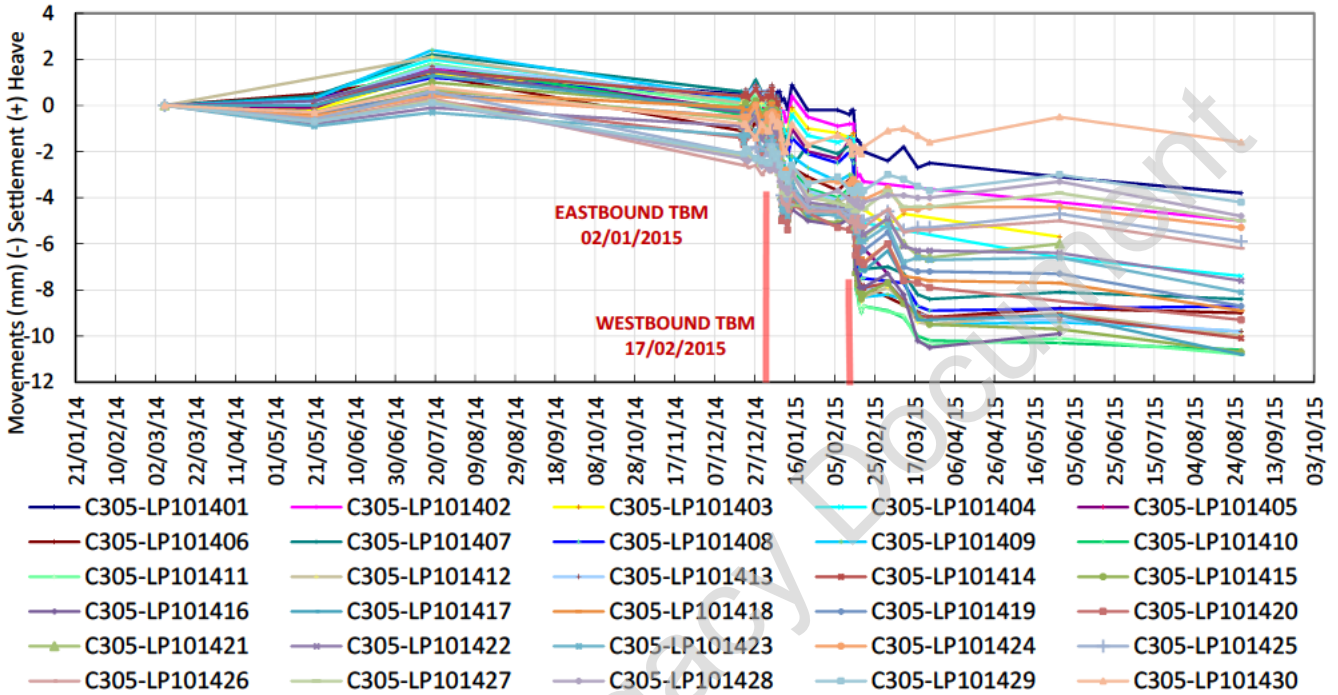
The percentage of levelling points with a settlement rate less than 2 mm/year is 74%, whereas 93% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP101401-C305-LP101430

AREA 10 Section 10 | levelling Point C305-LP101401 C305-LP101430



The graph above shows a maximum settlement of -5 mm after the eastbound TBM transit and a total maximum settlement of -11 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

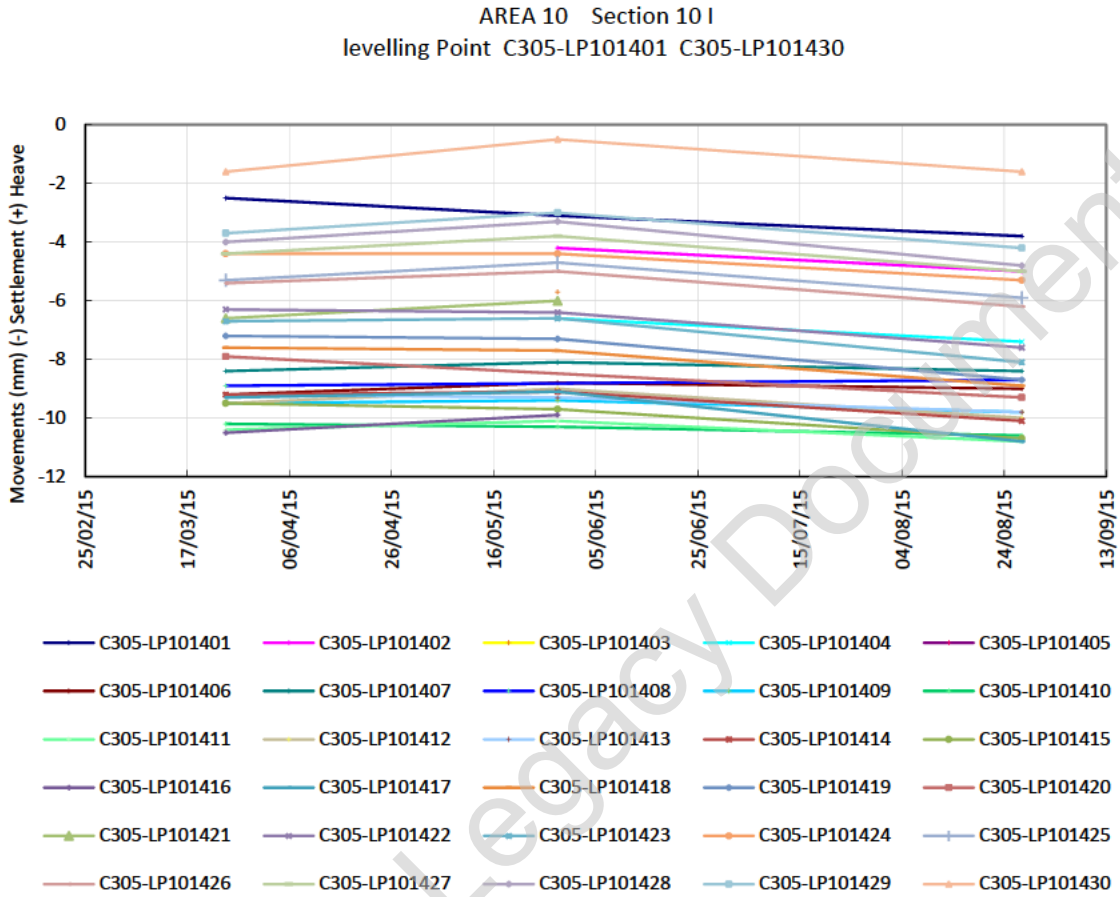
The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year	
	24/03/2015	28/05/2015	27/08/2015		
C305-LP101401	-2.50	-3.10	-3.80	#N/A	
C305-LP101402	#N/A	-4.20	-5.00	-2.516	
C305-LP101403	#N/A	-5.70	#N/A	-2.811	
C305-LP101404	#N/A	-6.60	-7.40	-2.038	
C305-LP101405	#N/A	#N/A	#N/A	-1.799	
C305-LP101406	-9.20	-8.80	-9.00	-1.365	
C305-LP101407	-8.40	-8.10	-8.40	-0.182	
C305-LP101408	-8.90	#N/A	-8.70	-4.505	
C305-LP101409	-9.50	-9.40	-9.80	-0.308	
C305-LP101410	-10.20	-10.30	-10.60	-1.377	
C305-LP101411	-10.40	-10.10	-10.80	-2.094	
C305-LP101412	-9.50	-9.00	-10.00	2.127	
C305-LP101413	-9.20	-9.30	-9.80	-0.365	
C305-LP101414	-9.20	-9.10	-10.10	-0.069	
C305-LP101415	-9.50	-9.70	-10.70	-2.378	
C305-LP101416	-10.50	-9.90	#N/A	-1.491	
C305-LP101417	-9.30	-9.10	-10.80	-2.026	
C305-LP101418	-7.60	-7.70	-8.90	-2.560	
C305-LP101419	-7.20	-7.30	-8.70	-3.334	
C305-LP101420	-7.90	#N/A	-9.30	-2.378	
C305-LP101421	-6.60	-6.00	#N/A	-2.082	
C305-LP101422	-6.30	-6.40	-7.60	-2.674	
C305-LP101423	-6.70	-6.60	-8.10	-2.435	
C305-LP101424	-4.40	-4.40	-5.30	#N/A	
C305-LP101425	-5.30	-4.70	-5.90	#N/A	
C305-LP101426	-5.40	-5.00	-6.20	#N/A	
C305-LP101427	-4.40	-3.80	-5.00	-1.491	
C305-LP101428	-4.00	-3.30	-4.80	-1.673	
C305-LP101429	-3.70	-3.00	-4.20	1.410	
C305-LP101430	-1.60	-0.50	-1.60	-0.911	
	Rate less than -2.5 mm/year			% less 2 mm/ year	74%
	Rate greater than -3.5 mm/year			% less 3 mm/ year	96%

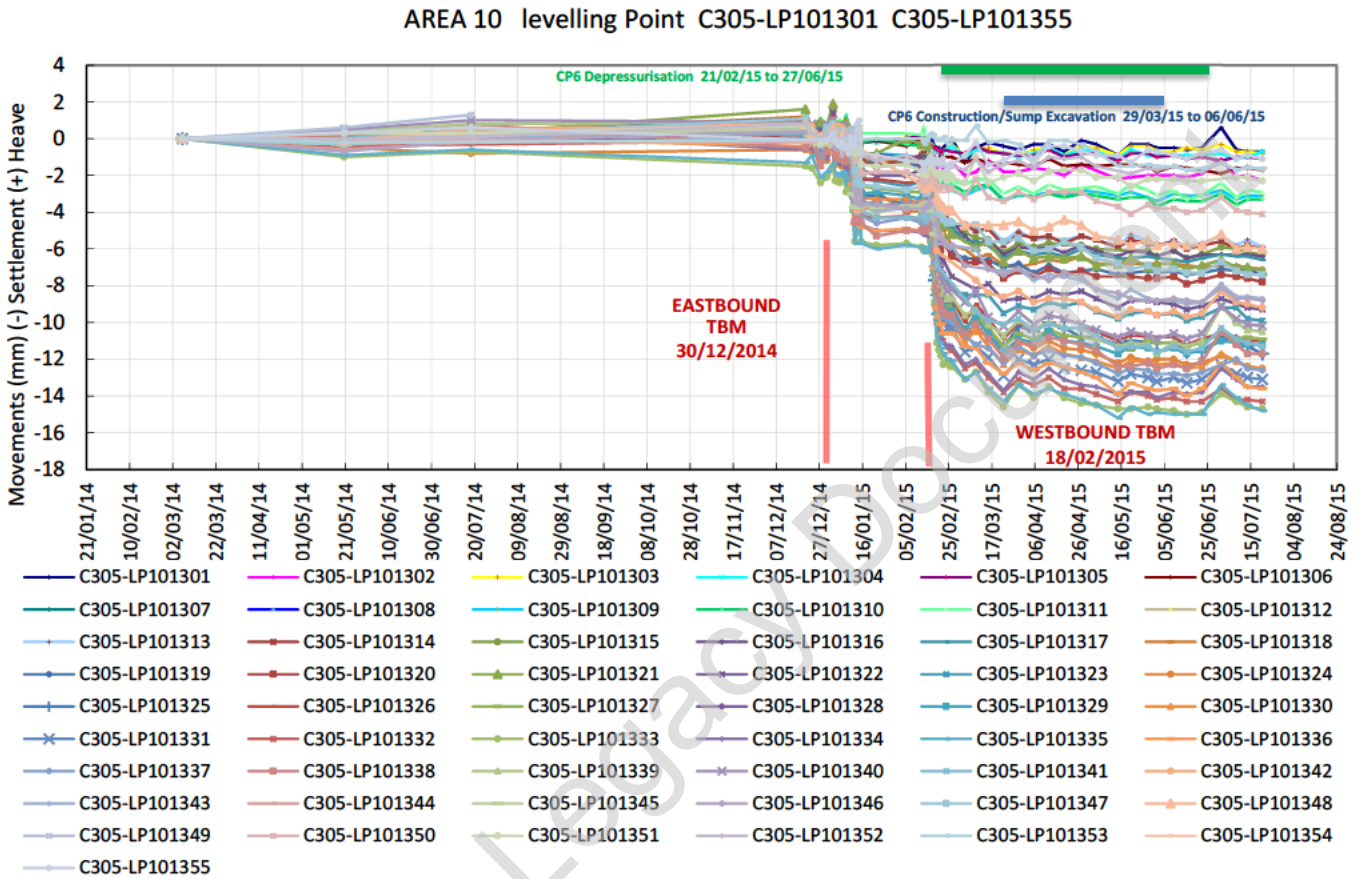
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 74%, whereas 96% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP101301-C305-LP101355



The graph above shows a maximum settlement of -6 mm after the eastbound TBM transit and a total maximum settlement of -15 mm after the westbound TBM transit and during CP6 works.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year
	22/06/2015	13/07/2015	20/07/2015	
C305-LP101301	-0.50	-0.70	-0.70	-2.800
C305-LP101302	-1.90	-2.00	-2.30	-4.392
C305-LP101303	-0.60	-0.70	-0.80	-2.397
C305-LP101304	-0.90	-1.00	-0.70	1.592

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C305-DSJ-C2-RGN-CRG03-50406 Rev 2.0

	Registered movement (mm)			mm/year
	22/06/2015	13/07/2015	20/07/2015	
C305-LP101305	-1.00	-1.00	-1.10	-0.997
C305-LP101306	-1.70	-1.60	-1.70	0.403
C305-LP101307	#N/A	#N/A	#N/A	#N/A
C305-LP101308	#N/A	#N/A	#N/A	#N/A
C305-LP101309	-3.10	-3.10	-3.10	0.000
C305-LP101310	-3.40	-3.30	-3.30	1.400
C305-LP101311	-3.10	-2.80	-2.90	3.202
C305-LP101312	#N/A	#N/A	#N/A	#N/A
C305-LP101313	-5.70	-5.50	-5.90	-1.189
C305-LP101314	-5.80	-5.80	-6.00	-1.995
C305-LP101315	-6.30	-6.20	-6.30	0.403
C305-LP101316	-6.30	-6.30	-6.40	-0.997
C305-LP101317	-6.50	-6.40	-6.60	-0.595
C305-LP101318	-7.00	-7.00	-7.10	-0.997
C305-LP101319	-7.30	-7.00	-7.50	-0.787
C305-LP101320	-7.70	-7.60	-7.80	-0.595
C305-LP101321	-6.90	-7.00	-7.20	-3.395
C305-LP101322	-9.10	-9.20	-9.30	-2.397
C305-LP101323	-9.70	-9.80	-9.90	-2.397
C305-LP101324	-12.20	-12.40	-12.50	-3.797
C305-LP101325	-11.60	-11.30	-11.70	0.210
C305-LP101326	-10.90	-11.00	-11.00	-1.400
C305-LP101327	-11.10	-10.80	-10.90	3.202
C305-LP101328	#N/A	#N/A	#N/A	#N/A
C305-LP101329	-11.50	-11.20	-11.20	4.200
C305-LP101330	-12.40	-12.40	-12.50	-0.997
C305-LP101331	-13.10	-13.00	-13.10	0.403
C305-LP101332	-14.30	-14.20	-14.30	0.403
C305-LP101333	-14.90	-14.60	-14.70	3.202
C305-LP101334	-13.80	-13.50	-13.50	4.200
C305-LP101335	-15.00	-14.50	-14.80	4.008
C305-LP101336	-13.60	-13.50	-13.60	0.403
C305-LP101337	-12.70	-12.50	-12.60	1.803
C305-LP101338	-12.10	-11.70	-11.70	5.600
C305-LP101339	-11.00	-10.40	-10.50	7.402
C305-LP101340	-10.60	-10.10	-10.20	6.002

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C305-DSJ-C2-RGN-CRG03-50406 Rev 2.0

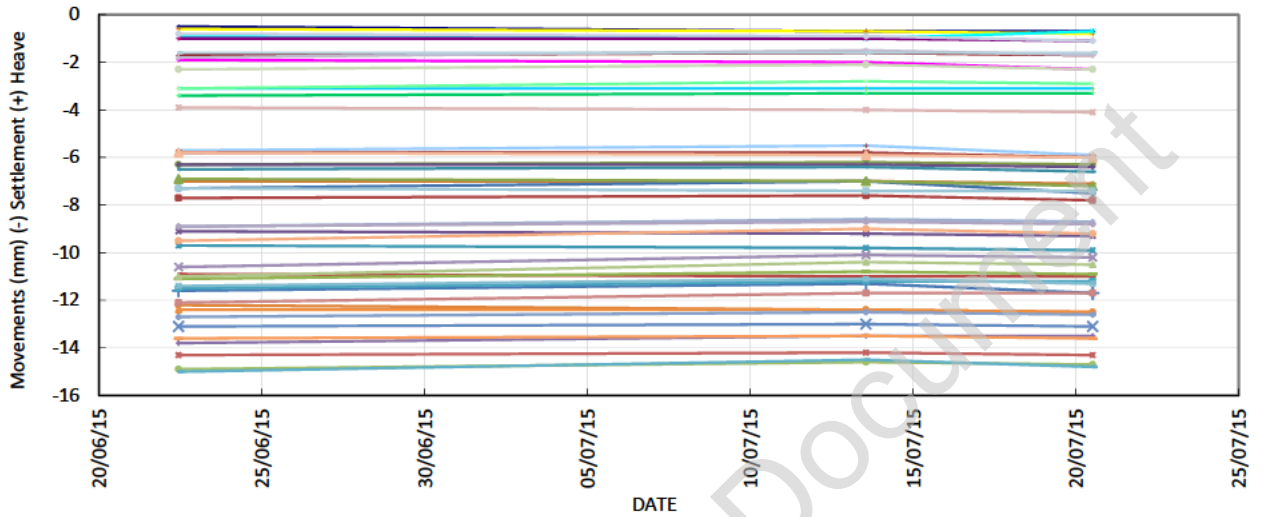
	Registered movement (mm)			mm/year
	22/06/2015	13/07/2015	20/07/2015	
C305-LP101341	-11.40	-11.10	-11.30	2.205
C305-LP101342	-9.50	-9.00	-9.20	5.005
C305-LP101343	-8.90	-8.60	-8.70	3.202
C305-LP101344	#N/A	#N/A	#N/A	#N/A
C305-LP101345	#N/A	#N/A	#N/A	#N/A
C305-LP101346	-8.90	-8.70	-8.80	1.803
C305-LP101347	-7.30	-7.40	-7.40	-1.400
C305-LP101348	-5.80	-5.90	-6.00	-2.397
C305-LP101349	#N/A	#N/A	#N/A	#N/A
C305-LP101350	-3.90	-4.00	-4.10	-2.397
C305-LP101351	-2.30	-2.10	-2.30	0.805
C305-LP101352	-1.80	-1.50	-1.70	2.205
C305-LP101353	-1.60	-1.60	-1.60	0.000
C305-LP101354	#N/A	#N/A	#N/A	#N/A
C305-LP101355	-0.80	-0.90	-1.10	-3.395
	Rate less than -2.5 mm/year		% less 2 mm/ year	89%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	96%

Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 89%, whereas 96% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.

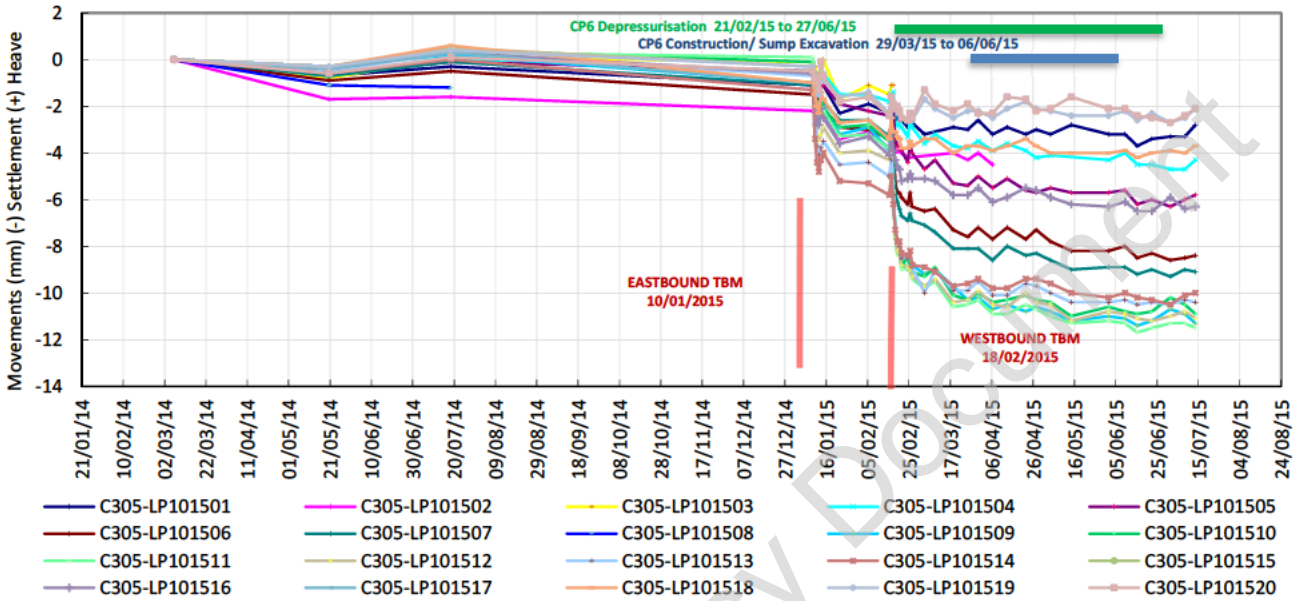
AREA 10
 levelling Point C305-LP101301 C305-LP101355



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|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| — C305-LP101301 | — C305-LP101302 | — C305-LP101303 | — C305-LP101304 | — C305-LP101305 | — C305-LP101306 |
| — C305-LP101307 | — C305-LP101308 | — C305-LP101309 | — C305-LP101310 | — C305-LP101311 | — C305-LP101312 |
| — C305-LP101313 | — C305-LP101314 | — C305-LP101315 | — C305-LP101316 | — C305-LP101317 | — C305-LP101318 |
| — C305-LP101319 | — C305-LP101320 | — C305-LP101321 | — C305-LP101322 | — C305-LP101323 | — C305-LP101324 |
| — C305-LP101325 | — C305-LP101326 | — C305-LP101327 | — C305-LP101328 | — C305-LP101329 | — C305-LP101330 |
| — C305-LP101331 | — C305-LP101332 | — C305-LP101333 | — C305-LP101334 | — C305-LP101335 | — C305-LP101336 |
| — C305-LP101337 | — C305-LP101338 | — C305-LP101339 | — C305-LP101340 | — C305-LP101341 | — C305-LP101342 |
| — C305-LP101343 | — C305-LP101344 | — C305-LP101345 | — C305-LP101346 | — C305-LP101347 | — C305-LP101348 |
| — C305-LP101349 | — C305-LP101350 | — C305-LP101351 | — C305-LP101352 | — C305-LP101353 | — C305-LP101354 |
| — C305-LP101355 | | | | | |

C305-LP101501-C305-LP101520

AREA 10 Levelling Point C305-LP101501 C305-LP101520



The graph above shows a maximum settlement of -6 mm after the eastbound TBM transit and a total maximum settlement of -12 mm after the westbound TBM transit and CP6 works.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

The table below shows the annual rate for the levelling points in this array.

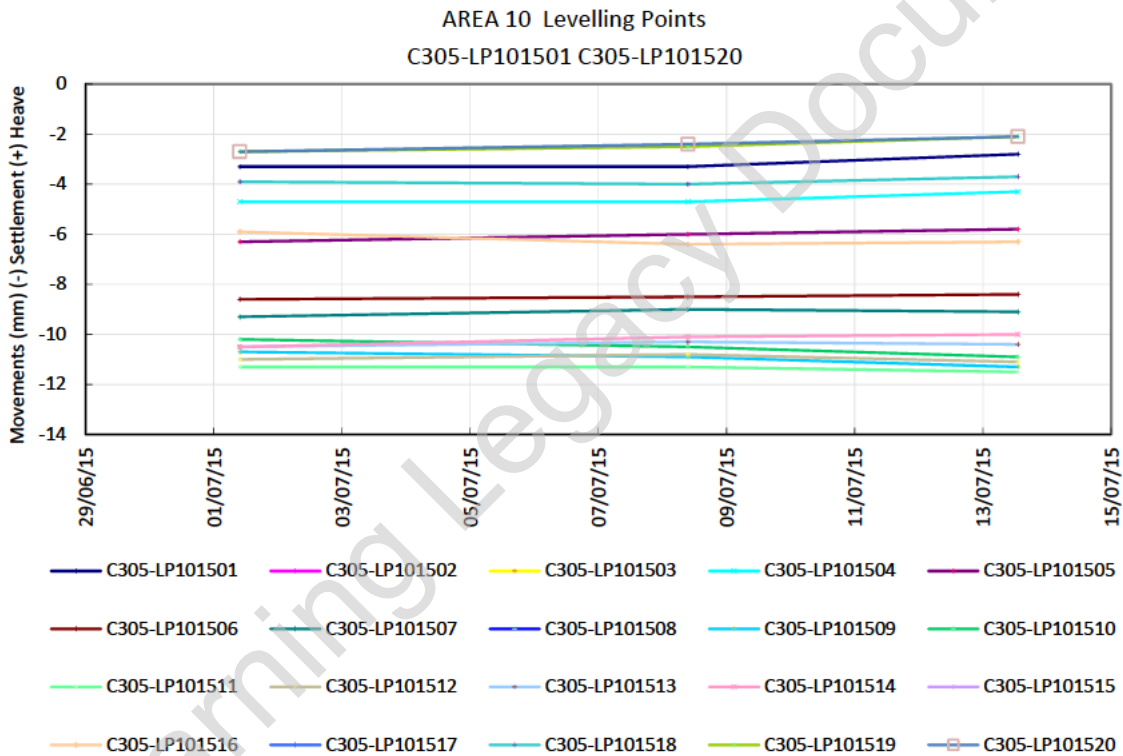
	Registered movement (mm)			mm/year
	01/07/2015	08/07/2015	13/07/2015	
C305-LP101501	-3.30	-3.30	-2.80	14.162
C305-LP101502	#N/A	#N/A	#N/A	#N/A
C305-LP101503	#N/A	#N/A	#N/A	#N/A
C305-LP101504	-4.70	-4.70	-4.30	11.330
C305-LP101505	-6.30	-6.00	-5.80	15.066
C305-LP101506	-8.60	-8.50	-8.40	5.966
C305-LP101507	-9.30	-9.00	-9.10	6.569
C305-LP101508	#N/A	#N/A	#N/A	#N/A
C305-LP101509	-10.70	-10.90	-11.30	-17.597
C305-LP101510	-10.20	-10.50	-10.90	-20.731
C305-LP101511	-11.30	-11.30	-11.50	-5.665
C305-LP101512	-11.00	-10.80	-11.10	-2.229
C305-LP101513	-10.50	-10.30	-10.40	3.435
C305-LP101514	-10.50	-10.10	-10.00	15.368
C305-LP101515	#N/A	#N/A	#N/A	#N/A
C305-LP101516	-5.90	-6.40	-6.30	-12.837
C305-LP101517	#N/A	#N/A	#N/A	#N/A
C305-LP101518	-3.90	-4.00	-3.70	5.363
C305-LP101519	-2.70	-2.50	-2.10	17.597

	Registered movement (mm)			mm/year
	01/07/2015	08/07/2015	13/07/2015	
C305-LP101520	-2.70	-2.40	-2.10	17.899
	Rate less than -2.5 mm/year			% less 2 mm/ year 73%
	Rate greater than -3.5 mm/year			% less 3 mm/ year 73%

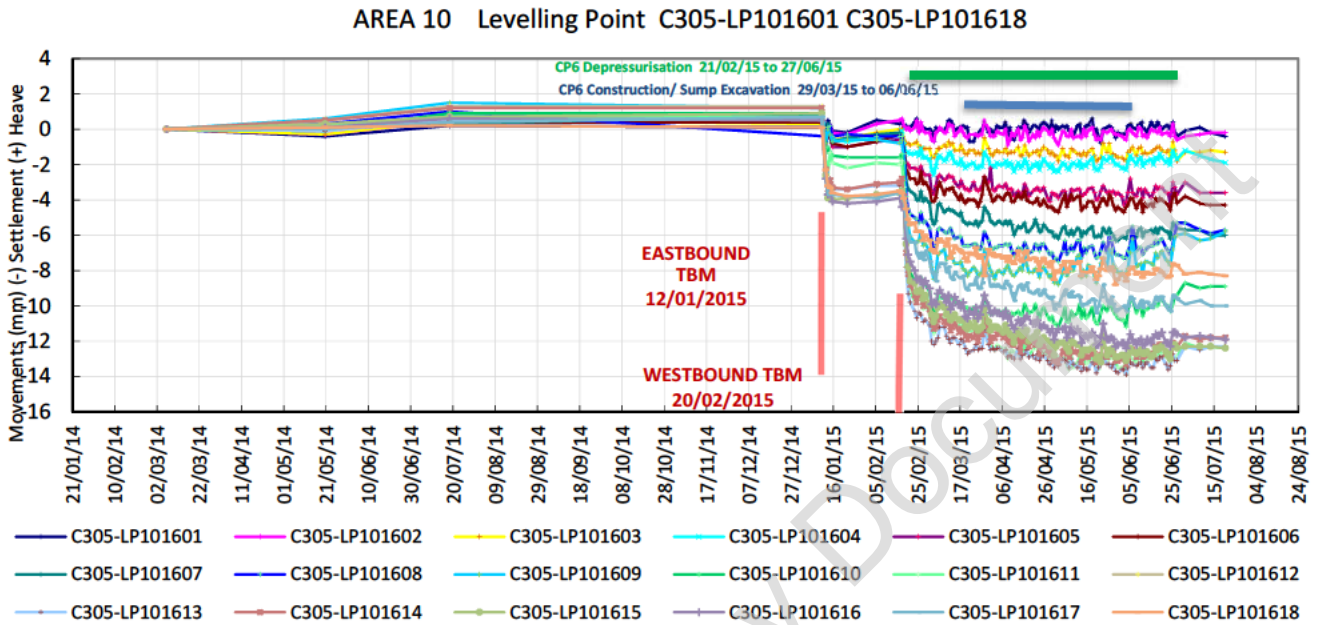
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 73%, whereas 73% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP101601-C305-LP101618



The graph above shows a maximum settlement of -4 mm after the eastbound TBM transit and a total maximum settlement of -14 mm after the westbound TBM transit and during CP6 works.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

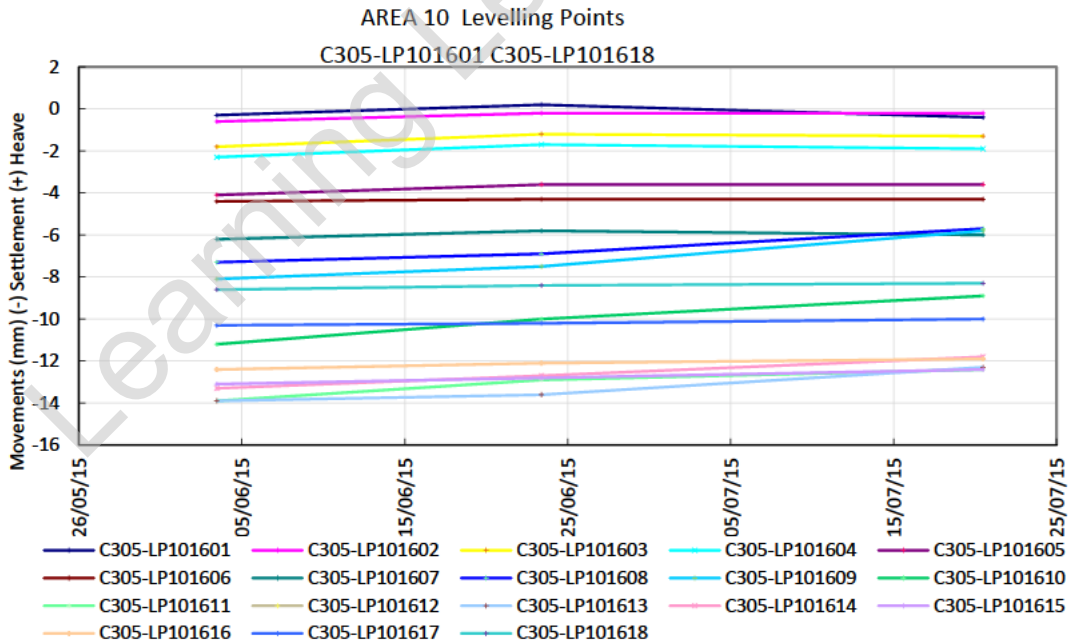
The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year	
	03/06/2015	23/06/2015	20/07/2015		
C305-LP101601	-0.30	0.20	-0.40	-1.201	
C305-LP101602	-0.60	-0.20	-0.20	2.924	
C305-LP101603	-1.80	-1.20	-1.30	3.577	
C305-LP101604	-2.30	-1.70	-1.90	2.768	
C305-LP101605	-4.10	-3.60	-3.60	3.655	
C305-LP101606	-4.40	-4.30	-4.30	0.731	
C305-LP101607	-6.20	-5.80	-6.00	1.306	
C305-LP101608	-7.30	-6.90	-5.70	12.636	
C305-LP101609	-8.10	-7.50	-5.80	18.144	
C305-LP101610	-11.20	-10.00	-8.90	17.675	
C305-LP101611	-13.90	-12.90	-12.40	11.357	
C305-LP101612	#N/A	#N/A	#N/A	#N/A	
C305-LP101613	-13.90	-13.60	-12.30	12.714	
C305-LP101614	-13.30	-12.70	-11.80	11.670	
C305-LP101615	-13.10	-12.80	-12.40	5.430	
C305-LP101616	-12.40	-12.10	-11.90	3.812	
C305-LP101617	-10.30	-10.20	-10.00	2.350	
C305-LP101618	-8.60	-8.40	-8.30	2.271	
	Rate less than -2.5 mm/year			% less 2 mm/ year	100%
	Rate greater than -3.5 mm/year			% less 3 mm/ year	100%

Note: All the movements are in mm. (-) Settlement / (+) Heave

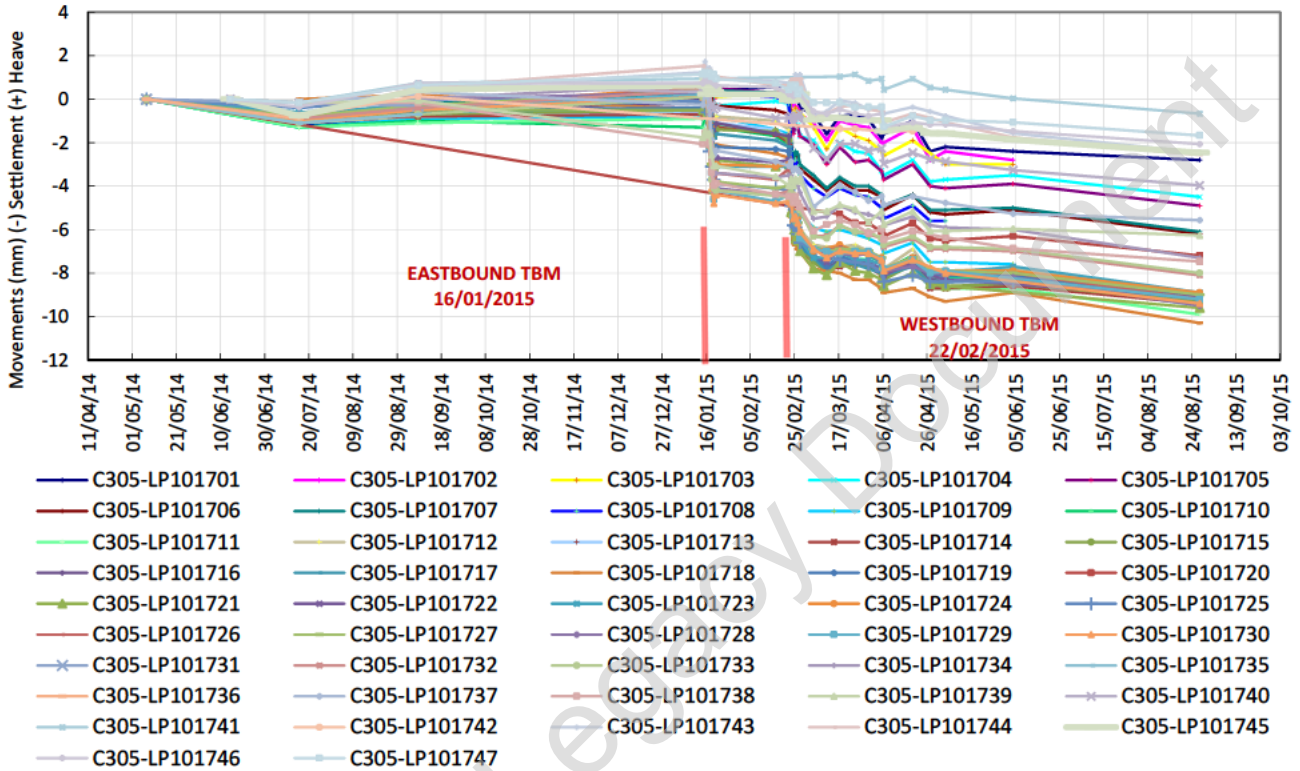
The percentage of levelling points with a settlement rate less than 2 mm/year is 100%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP101701-C305-LP101747

AREA 10 Section K levelling Point C305-LP101701 C305-LP101747



The graph above shows a maximum settlement of -5 mm after the eastbound TBM transit and a total maximum settlement of -10 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

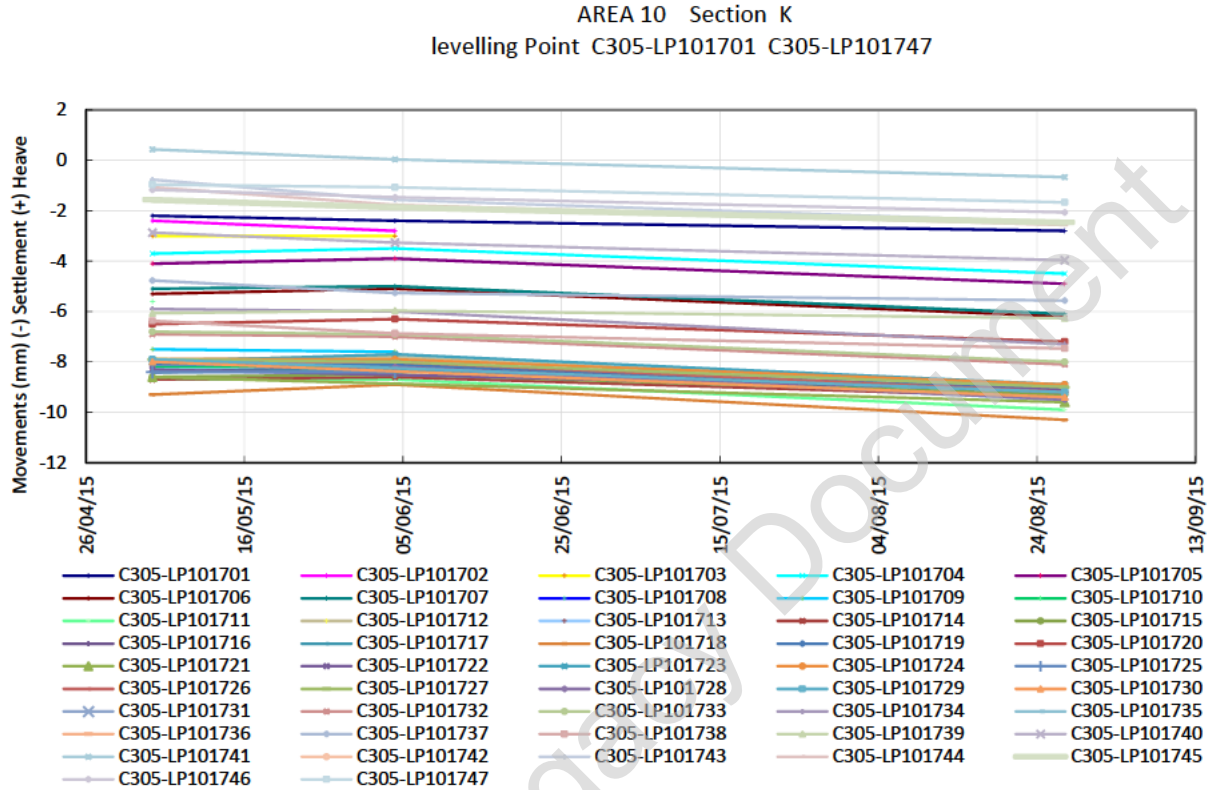
The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year
	04/05/2015	04/06/2015	27/08/2015	
C305-LP101701	-2.20	-2.40	-2.80	-1.865
C305-LP101702	-2.40	-2.80	#N/A	-4.771
C305-LP101703	-3.00	-3.00	#N/A	0.000
C305-LP101704	-3.70	-3.50	-4.50	-2.918
C305-LP101705	-4.10	-3.90	-4.90	-2.918
C305-LP101706	-5.30	-5.10	-6.20	-3.259
C305-LP101707	-5.10	-5.00	-6.10	-3.509
C305-LP101708	-5.60	#N/A	#N/A	#N/A
C305-LP101709	-7.50	-7.60	#N/A	-1.193
C305-LP101710	-8.20	-8.20	-9.40	-4.100
C305-LP101711	-8.70	-8.70	-9.90	-4.100
C305-LP101712	-7.90	-7.80	-9.00	-3.850
C305-LP101713	-8.30	-8.30	-9.50	-4.100
C305-LP101714	-8.70	-8.60	-9.40	-2.484
C305-LP101715	-8.60	-8.50	-9.30	-2.484
C305-LP101716	-8.40	-8.20	-9.10	-2.576
C305-LP101717	-8.40	-8.30	-9.20	-2.825
C305-LP101718	-9.30	-8.90	-10.30	-3.785
C305-LP101719	-8.10	-8.10	-9.10	-3.417
C305-LP101720	-6.50	-6.30	-7.20	-2.576
C305-LP101721	-8.60	#N/A	-9.60	-3.171
C305-LP101722	-8.30	#N/A	-9.10	-2.537
C305-LP101723	-8.00	-7.70	-8.90	-3.352
C305-LP101724	-7.90	-7.90	-8.90	-3.417
C305-LP101725	-8.40	-8.40	#N/A	0.000
C305-LP101726	-8.00	-8.00	-9.20	-4.100
C305-LP101727	-7.90	-8.00	-9.00	-3.666
C305-LP101728	#N/A	-8.20	-9.50	#N/A
C305-LP101729	-7.90	#N/A	-9.20	#N/A
C305-LP101730	-8.00	#N/A	-9.40	-4.440
C305-LP101731	#N/A	#N/A	#N/A	#N/A
C305-LP101732	-6.90	-7.00	-8.10	-4.008
C305-LP101733	-6.80	-6.90	-8.00	-4.008
C305-LP101734	-5.90	-6.00	-7.30	-4.691
C305-LP101735	#N/A	#N/A	#N/A	#N/A
C305-LP101736	#N/A	#N/A	#N/A	#N/A
C305-LP101737	-4.77	-5.27	-5.57	-2.272
C305-LP101738	-6.37	-6.87	-7.47	-3.297
C305-LP101739	-6.07	-5.97	-6.27	-0.776
C305-LP101740	-2.87	-3.27	-3.97	-3.389
C305-LP101741	0.43	0.03	-0.67	-3.389
C305-LP101742	#N/A	#N/A	#N/A	#N/A
C305-LP101743	-0.77	-1.57	-2.47	-5.070
C305-LP101744	-1.07	-1.77	-2.57	-4.479
C305-LP101745	-1.57	-1.87	-2.47	-2.798
C305-LP101746	-1.17	-1.47	-2.07	-2.798
C305-LP101747	-0.97	-1.07	-1.67	-2.299
	Rate less than -2.5 mm/year		% less 2 mm/ year	23%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	63%

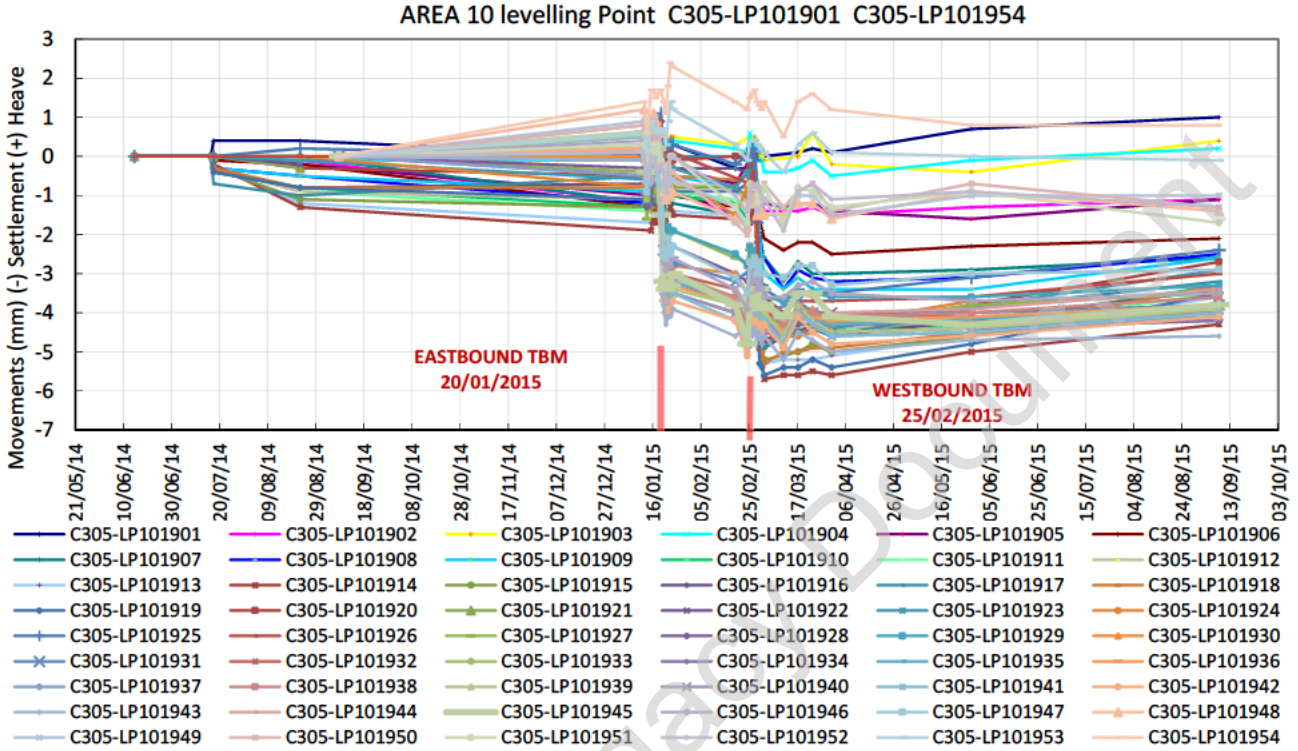
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 23%, whereas 63% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.



C305-LP101901-C305-LP101954



The graph above shows a maximum settlement of -5 mm after the eastbound TBM transit and a total maximum settlement of -6 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year
	31/03/2015	28/05/2015	08/09/2015	
C305-LP101901	0.10	0.70	1.00	1.927
C305-LP101902	-1.50	-1.30	-1.10	0.884
C305-LP101903	-0.20	-0.40	0.40	1.531
C305-LP101904	-0.50	-0.10	0.20	1.526
C305-LP101905	-1.40	-1.60	-1.10	0.807
C305-LP101906	-2.50	-2.30	-2.10	0.884
C305-LP101907	-3.00	-2.90	-2.60	0.925
C305-LP101908	-3.20	-3.10	-2.50	1.649
C305-LP101909	-3.40	-3.40	-2.60	1.932
C305-LP101910	-4.40	-4.30	-3.30	2.615
C305-LP101911	-4.50	-4.40	-3.50	2.374
C305-LP101912	-4.40	-4.20	-3.40	2.333
C305-LP101913	-5.10	-4.60	-3.60	3.417
C305-LP101914	-5.60	-5.00	-4.30	2.893
C305-LP101915	-5.00	-4.60	-3.80	2.733
C305-LP101916	-4.60	-4.20	-3.40	2.733

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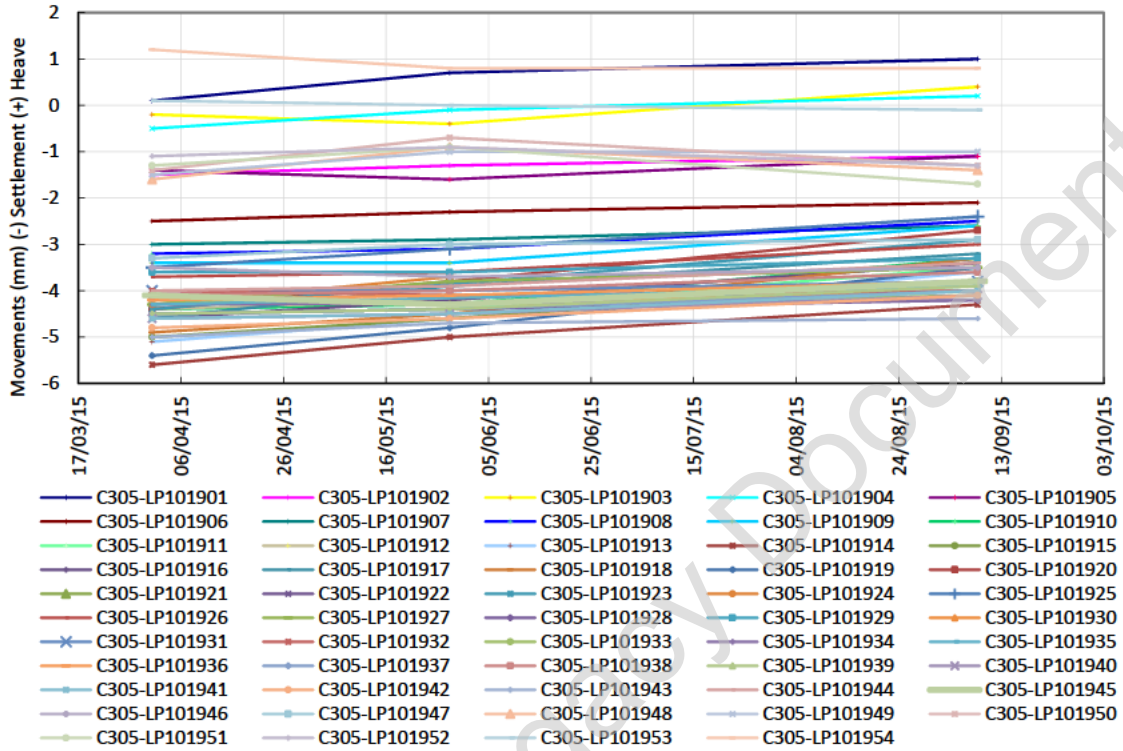
	Registered movement (mm)			mm/year
	31/03/2015	28/05/2015	08/09/2015	
C305-LP101917	-4.60	-3.90	-3.20	3.093
C305-LP101918	-4.90	-4.50	-3.30	3.699
C305-LP101919	-5.40	-4.80	-3.50	4.342
C305-LP101920	-4.40	-3.80	-2.70	3.859
C305-LP101921	#N/A	#N/A	#N/A	#N/A
C305-LP101922	#N/A	#N/A	#N/A	#N/A
C305-LP101923	-4.40	#N/A	-2.90	#N/A
C305-LP101924	-4.30	-3.70	#N/A	#N/A
C305-LP101925	-3.50	-3.10	-2.40	2.492
C305-LP101926	-3.70	-3.60	-3.00	1.649
C305-LP101927	-4.30	-3.80	-3.50	1.726
C305-LP101928	-4.50	-4.40	-4.20	0.683
C305-LP101929	-3.60	-3.60	-3.30	0.724
C305-LP101930	-4.10	-4.30	-4.00	0.324
C305-LP101931	-4.00	-4.00	-3.80	0.483
C305-LP101932	-4.00	-4.10	-4.00	0.041
C305-LP101933	-4.20	-4.30	-4.10	0.283
C305-LP101934	-4.30	#N/A	-4.20	#N/A
C305-LP101935	-4.30	#N/A	-3.90	#N/A
C305-LP101936	-4.20	-4.10	-3.80	0.925
C305-LP101937	-4.50	-4.40	-4.00	1.166
C305-LP101938	-4.10	-4.00	-3.60	1.166
C305-LP101939	-4.50	-4.40	-3.90	1.408
C305-LP101940	-4.60	-4.50	-4.10	1.166
C305-LP101941	-4.60	-4.50	-4.00	1.408
C305-LP101942	-4.80	-4.60	-4.10	1.608
C305-LP101943	-5.00	-4.70	-4.60	0.843
C305-LP101944	-4.00	-3.90	-3.40	1.408
C305-LP101945	-4.10	-4.30	-3.80	0.807
C305-LP101946	-3.50	-3.70	-3.50	0.082
C305-LP101947	-3.30	-3.00	-2.90	0.843
C305-LP101948	-1.60	-0.90	-1.40	0.195
C305-LP101949	-1.50	-1.00	-1.00	1.002
C305-LP101950	-1.40	-0.70	-1.30	-0.046
C305-LP101951	-1.30	-0.90	-1.70	-1.130
C305-LP101952	-1.10	-0.90	-1.30	-0.565
C305-LP101953	0.10	0.00	-0.10	-0.442
C305-LP101954	1.20	0.80	0.80	-0.802
	Rate less than -2.5 mm/year		% less 2 mm/ year	100%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	100%

Note: All the movements are in mm. (-) Settlement / (+) Heave

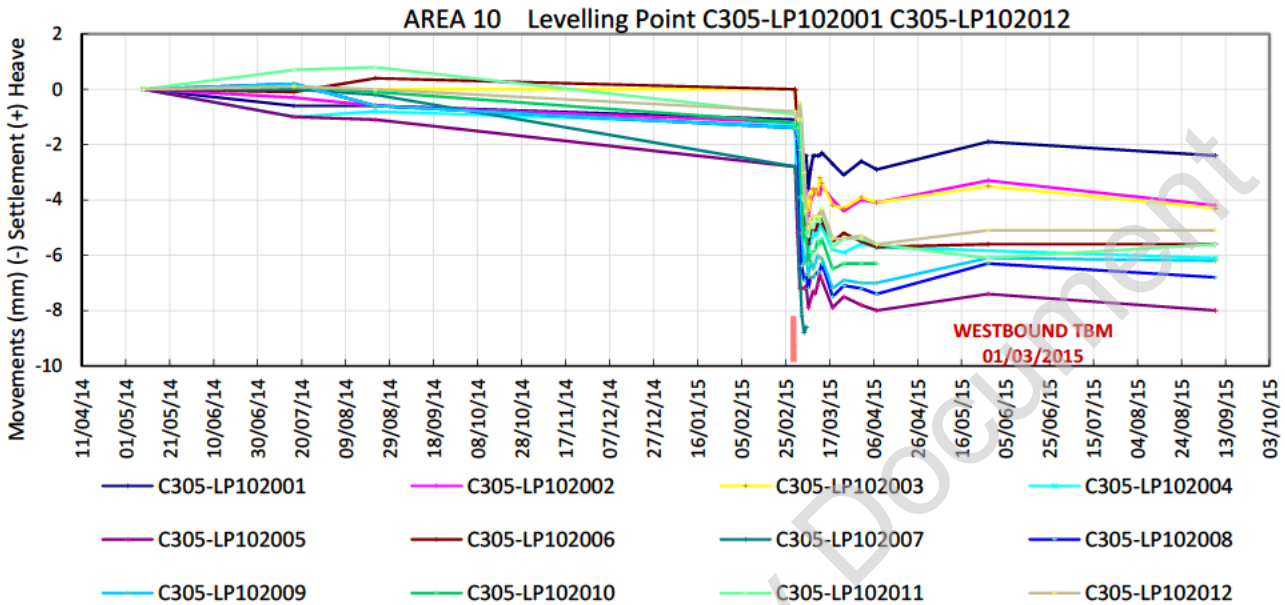
The percentage of levelling points with a settlement rate less than 2 mm/year is 100%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.

AREA 10
 levelling Point C305-LP101901 C305-LP101954



C305-LP102001-C305-LP102012



The graph above shows a maximum settlement of -3 mm after the eastbound TBM transit and a total maximum settlement of -9 mm after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

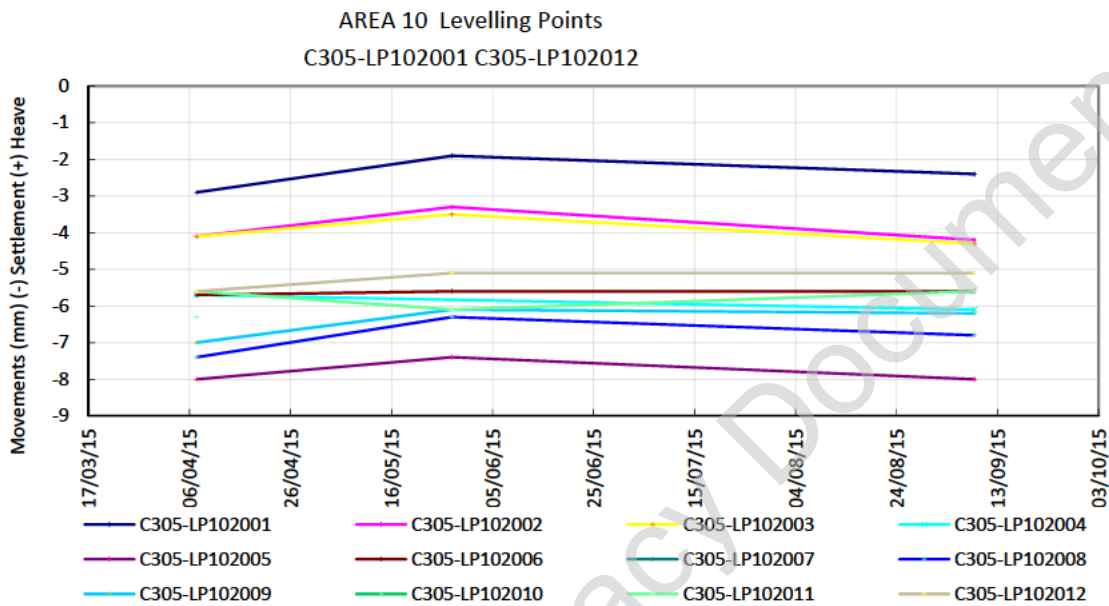
The table below shows the annual rate for the levelling points in this array.

	Registered movement (mm)			mm/year
	07/04/2015	28/05/2015	08/09/2015	
C305-LP102001	-2.90	-1.90	-2.40	0.749
C305-LP102002	-4.10	-3.30	-4.20	-0.672
C305-LP102003	-4.10	-3.50	-4.30	-0.821
C305-LP102004	-5.70	#N/A	-6.10	#N/A
C305-LP102005	-8.00	-7.40	-8.00	-0.313
C305-LP102006	-5.70	-5.60	-5.60	0.202
C305-LP102007	#N/A	#N/A	#N/A	#N/A
C305-LP102008	-7.40	-6.30	-6.80	0.951
C305-LP102009	-7.00	-6.10	-6.20	1.563
C305-LP102010	-6.30	#N/A	#N/A	#N/A
C305-LP102011	-5.60	-6.10	-5.60	0.261
C305-LP102012	-5.60	-5.10	-5.10	1.010
	Rate less than -2.5 mm/year		% less 2 mm/ year	100%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	100%

Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 100%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the levelling points in this array.

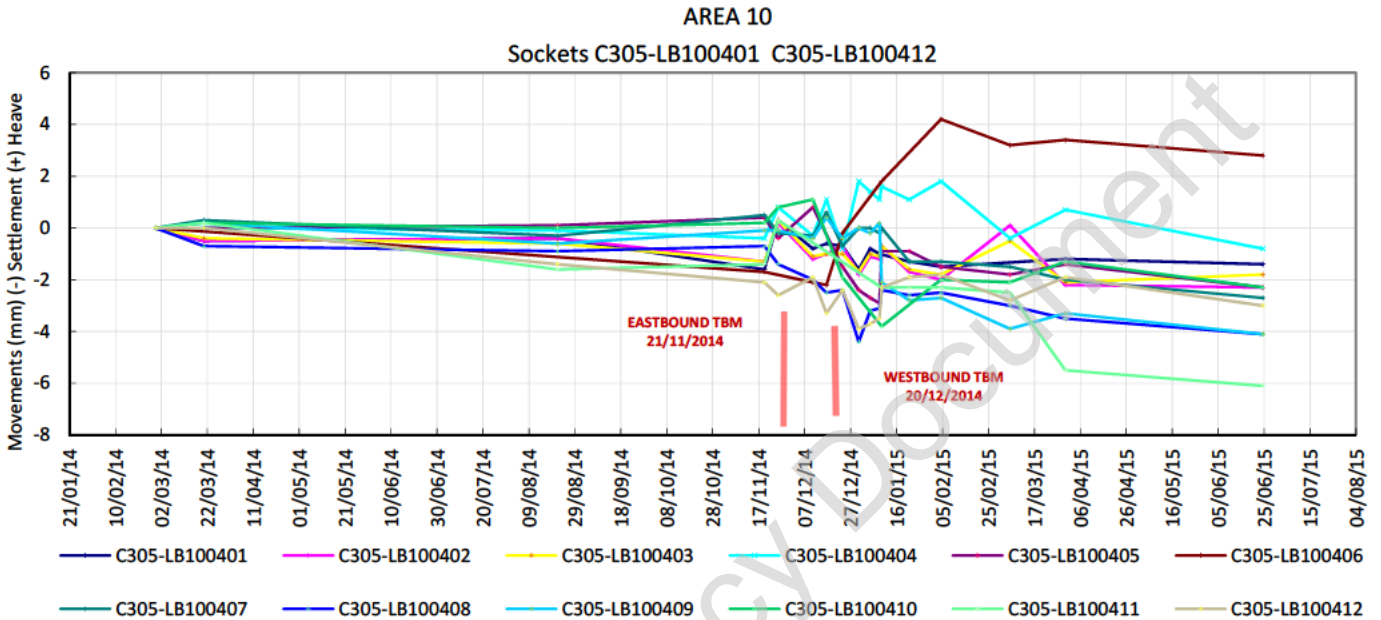


There is a number of sections in which the settlement have not reached 10mm. Such sections are listed below, but their graphs are not been included in the report as explained at the commencement of section 7:

- C305-LP100801-100821 (Thames Water Asset)
- C305-LP101201-101215 (Thames Water Asset)
- C305-LP102402-102403
- C305-LP103101-102104
- C305-LP101801-101827 (Thames Water Asset)
- C305-LP107001-107004
- C305-LP102101-102119 (Thames Water Asset)

SOCKETS

C305-LB100401-C305-LB100412



The graph above shows a maximum settlement of -3.3 mm after the eastbound TBM transit and a -6.1 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

The table below shows the annual rate for the sockets in this array.

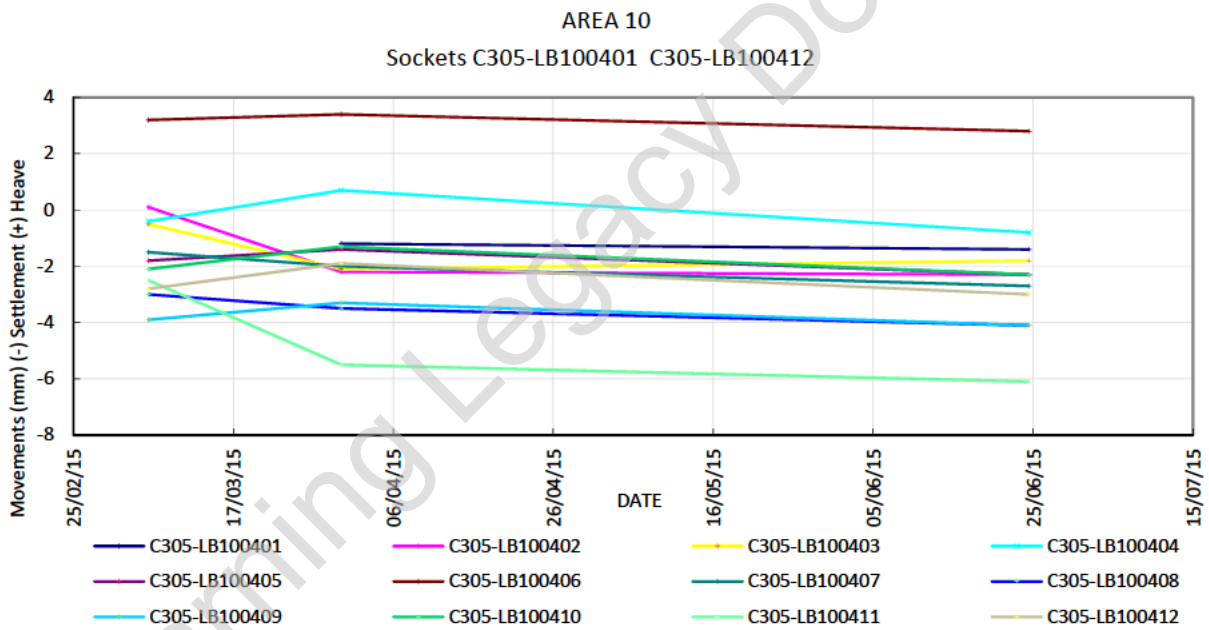
	Registered movement (mm)			mm/year
	06/03/2015	30/03/2015	24/06/2015	
C305-LB100401	#N/A	-1.20	-1.40	-0.849
C305-LB100402	0.10	-2.20	-2.30	-5.961
C305-LB100403	-0.50	-2.10	-1.80	-2.831
C305-LB100404	-0.40	0.70	-0.80	-2.661
C305-LB100405	-1.80	-1.40	-2.30	-2.230
C305-LB100406	3.20	3.40	2.80	-1.649
C305-LB100407	-1.50	-2.00	-2.70	-3.711
C305-LB100408	-3.00	-3.50	-4.10	-3.355
C305-LB100409	-3.90	-3.30	-4.10	-1.387
C305-LB100410	-2.10	-1.30	-2.30	-1.612

	Registered movement (mm)			mm/year
	06/03/2015	30/03/2015	24/06/2015	
C305-LB100411	-2.50	-5.50	-6.10	-9.448
C305-LB100412	-2.80	-1.90	-3.00	-1.724
	Rate less than -2.5 mm/year		% less 2 mm/year	50%
	Rate greater than -3.5 mm/year		% less 3 mm/year	75%

Note: All the movements are in mm. (-) Settlement / (+) Heave

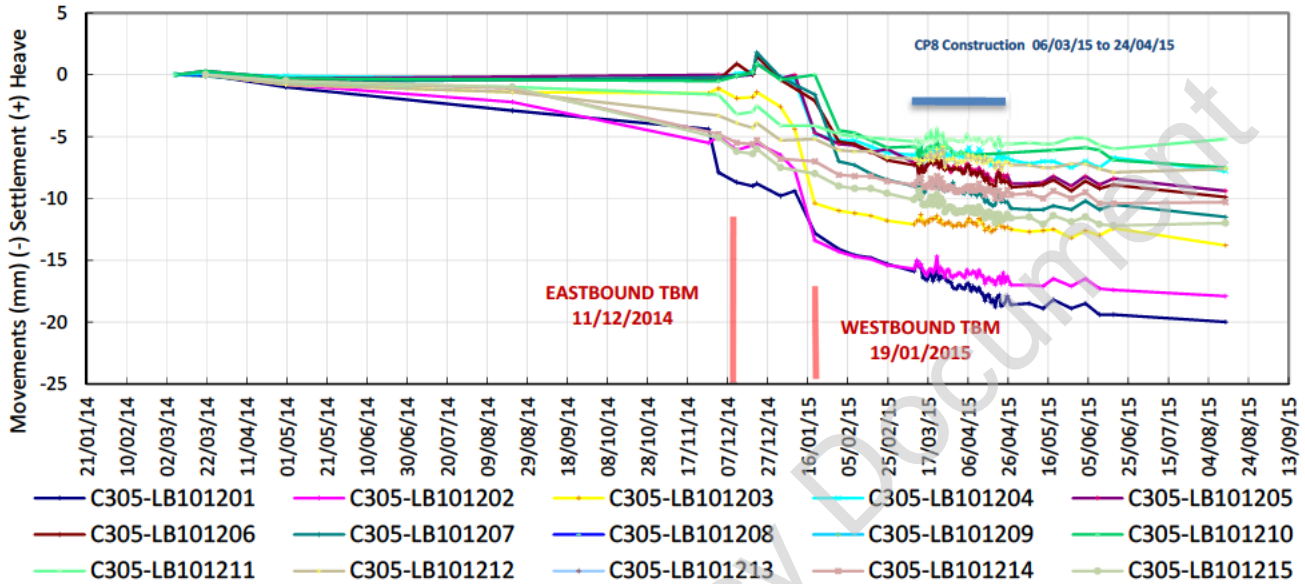
The percentage of levelling points with a settlement rate less than 2 mm/year is 50%, whereas 75% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB101201-C305-LB101215

AREA 10 Sockets C305-LB101201 C305-LB101201



The graph above shows a maximum settlement of -13 mm after the eastbound TBM transit and a -20 mm total maximum settlement after the westbound TBM transit and after CP8 works.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

The table below shows the annual rate for the sockets in this array.

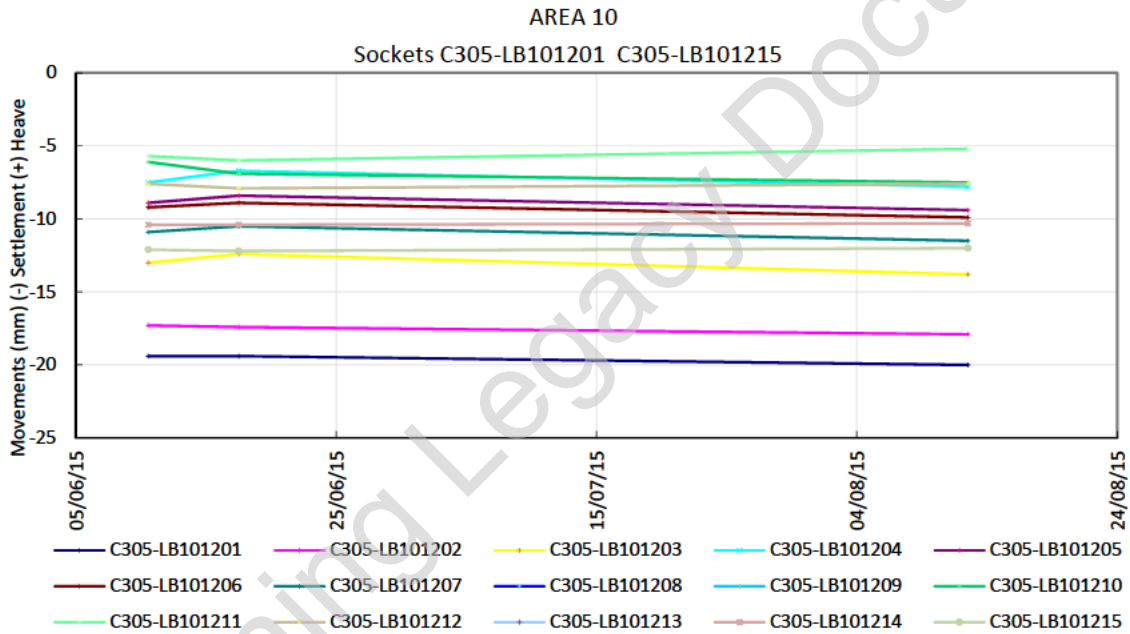
	Registered movement (mm)			mm/year
	10/06/2015	17/06/2015	12/08/2015	
C305-LB101201	-19.40	-19.40	-20.00	-3.643
C305-LB101202	-17.30	-17.40	-17.90	-3.393
C305-LB101203	-13.00	-12.40	-13.80	-6.360
C305-LB101204	-7.50	-6.70	-7.80	-3.824
C305-LB101205	-8.90	-8.40	-9.40	-4.288
C305-LB101206	-9.20	-8.90	-9.90	-5.002
C305-LB101207	-10.90	-10.50	-11.50	-4.645
C305-LB101208	#N/A	#N/A	#N/A	#N/A
C305-LB101209	#N/A	#N/A	#N/A	#N/A
C305-LB101210	-6.10	-6.90	-7.50	-6.498
C305-LB101211	-5.70	-6.00	-5.20	0.000
C305-LB101212	-7.60	-7.90	-7.60	0.000
C305-LB101213	#N/A	#N/A	#N/A	#N/A
C305-LB101214	-10.40	-10.40	-10.30	0.000

	Registered movement (mm)			mm/year
	10/06/2015	17/06/2015	12/08/2015	
C305-LB101215	-12.10	-12.20	-12.00	0.000
	Rate less than -2.5 mm/year			% less 2 mm/ year 33%
	Rate greater than -3.5 mm/year			% less 3 mm/ year 42%

Note: All the movements are in mm. (-) Settlement / (+) Heave

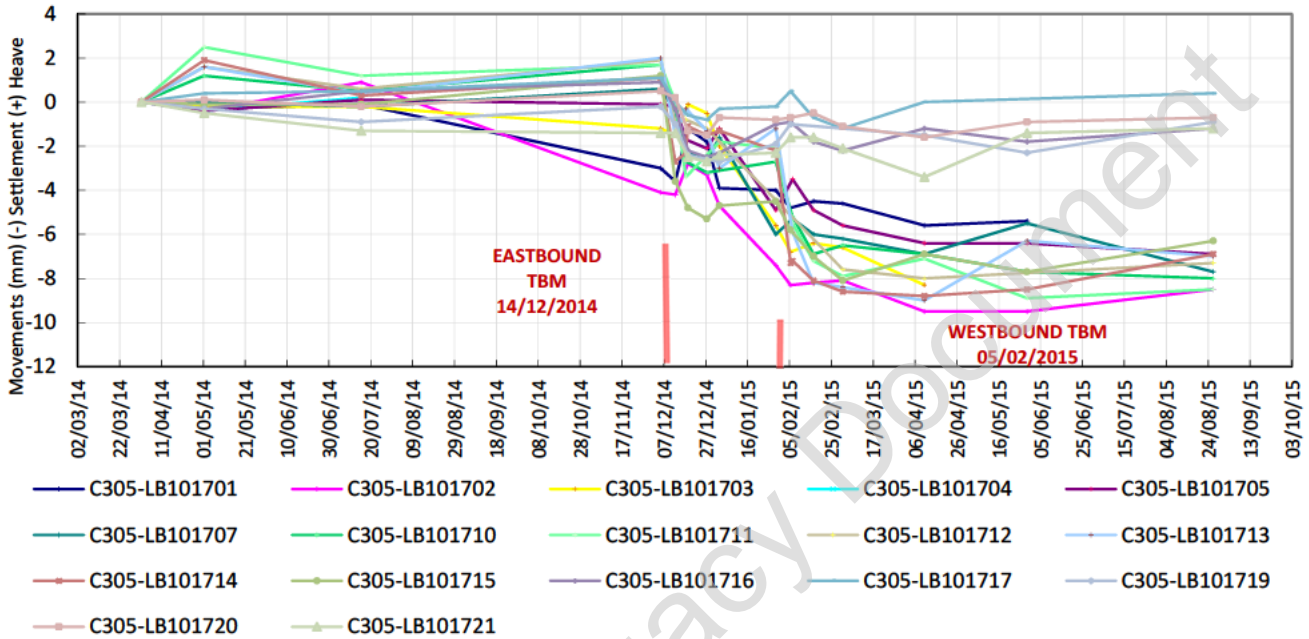
The percentage of levelling points with a settlement rate less than 2 mm/year is 33%, whereas 42% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB101701-C305-LB101721

AREA 10 Sockets C305-LB101701 C305-LB101721



The graph above shows a maximum settlement of -8 mm after the eastbound TBM transit and a -10 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

The table below shows the annual rate for the sockets in this array.

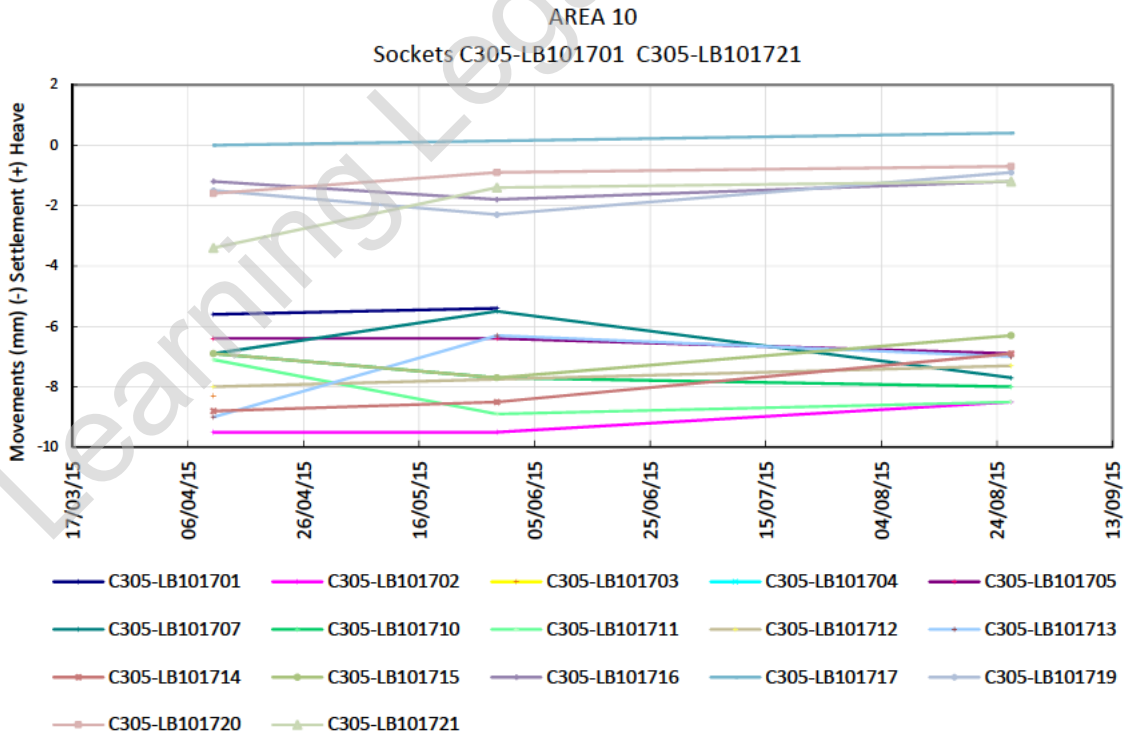
	Registered movement (mm)			mm/year
	10/04/2015	29/05/2015	26/08/2015	
C305-LB101701	-5.60	-5.40	#N/A	#N/A
C305-LB101702	-9.50	-9.50	-8.50	2.820
C305-LB101703	-8.30	#N/A	#N/A	#N/A
C305-LB101704	#N/A	#N/A	#N/A	#N/A
C305-LB101705	-6.40	-6.40	-6.90	-1.410
C305-LB101707	-6.90	-5.50	-7.70	-2.950
C305-LB101710	-6.90	-7.70	-8.00	-2.705
C305-LB101711	-7.10	-8.90	-8.50	-3.055
C305-LB101712	-8.00	#N/A	-7.30	#N/A

	Registered movement (mm)			mm/year
	10/04/2015	29/05/2015	26/08/2015	
C305-LB101713	-9.00	-6.30	-7.00	4.301
C305-LB101714	-8.80	-8.50	-6.90	5.209
C305-LB101715	-6.90	-7.70	-6.30	2.089
C305-LB101716	-1.20	-1.80	-1.20	0.298
C305-LB101717	0.00	#N/A	0.40	#N/A
C305-LB101719	-1.50	-2.30	-0.90	2.089
C305-LB101720	-1.60	-0.90	-0.70	2.191
C305-LB101721	-3.40	-1.40	-1.20	5.212
	Rate less than -2.5 mm/year		% less 2 mm/year	75%
	Rate greater than -3.5 mm/year		% less 3 mm/year	100%

Note: All the movements are in mm. (-) Settlement / (+) Heave

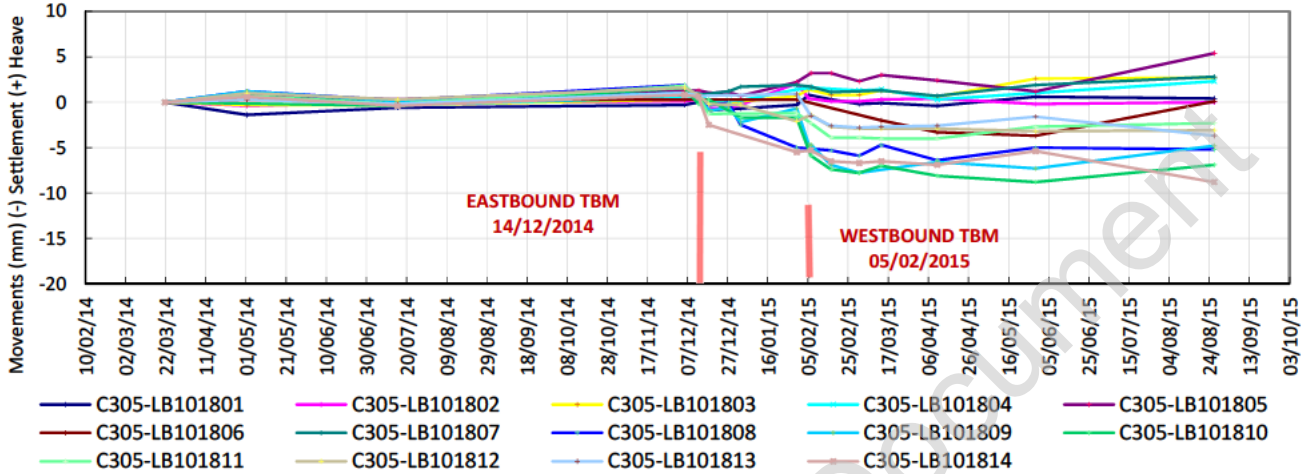
The percentage of levelling points with a settlement rate less than 2 mm/year is 75%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB101801-C305-LB101814

AREA 10 Sockets C305-LB101801 C305-LB101814



The graph above shows a maximum settlement of -5 mm after the eastbound TBM transit and a -9 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

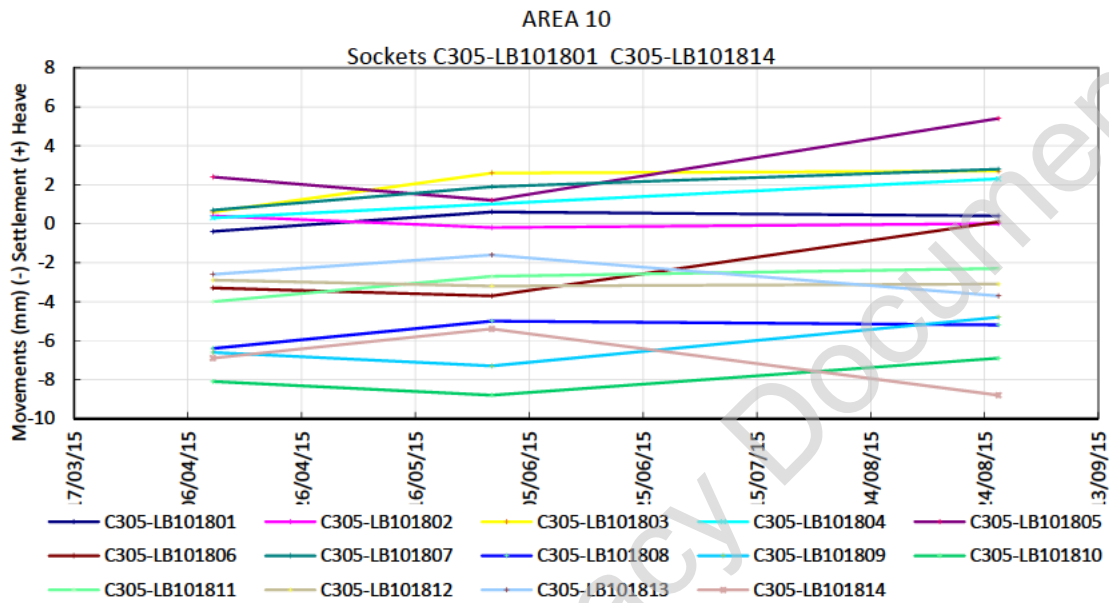
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	10/04/2015	29/05/2015	26/08/2015	
C305-LB101801	-0.40	0.60	0.40	1.759
C305-LB101802	0.40	-0.20	0.00	-0.830
C305-LB101803	0.60	2.60	2.70	4.927
C305-LB101804	0.30	#N/A	2.30	#N/A
C305-LB101805	2.40	1.20	5.40	9.056
C305-LB101806	-3.30	-3.70	0.10	9.786
C305-LB101807	0.70	1.90	2.80	5.325
C305-LB101808	-6.40	-5.00	-5.20	2.688
C305-LB101809	-6.60	-7.30	-4.80	5.423
C305-LB101810	-8.10	-8.80	-6.90	3.732
C305-LB101811	-4.00	-2.70	-2.30	4.147
C305-LB101812	-2.90	-3.20	-3.10	-0.415
C305-LB101813	-2.60	-1.60	-3.70	-3.599
C305-LB101814	-6.90	-5.40	-8.80	-6.103
	Rate less than -2.5 mm/year		% less 2 mm/ year	85%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	85%

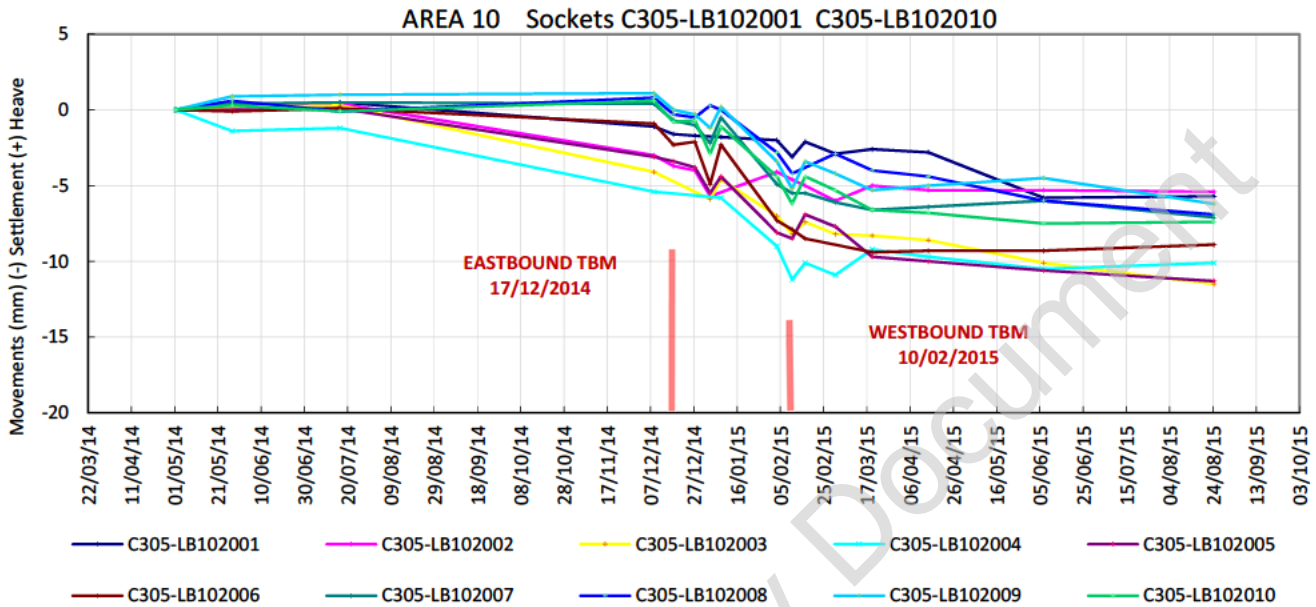
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 85%, whereas 85% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB102001-C305-LB102010



The graph above shows a maximum settlement of -5 mm after the eastbound TBM transit and a -9 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

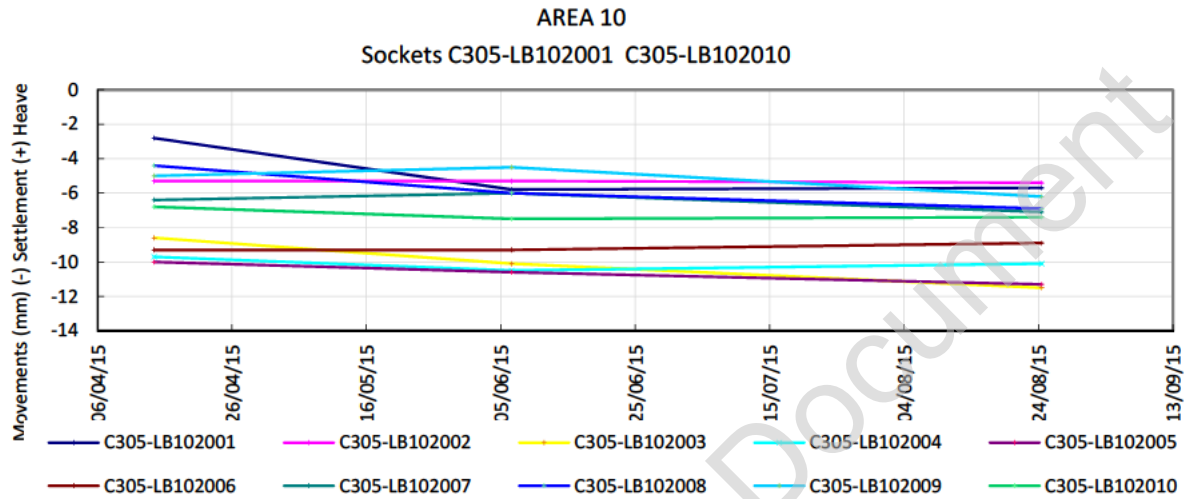
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	14/04/2015	06/06/2015	24/08/2015	
C305-LB102001	-2.80	-5.80	-5.70	-7.368
C305-LB102002	-5.30	-5.30	-5.40	-0.291
C305-LB102003	-8.60	-10.10	-11.50	-7.898
C305-LB102004	-9.70	-10.50	-10.10	-0.880
C305-LB102005	-10.00	-10.60	-11.30	-3.566
C305-LB102006	-9.30	-9.30	-8.90	1.163
C305-LB102007	-6.40	-6.00	-7.10	-2.176
C305-LB102008	-4.40	-6.00	-6.90	-6.701
C305-LB102009	-5.00	-4.50	-6.20	-3.665
C305-LB102010	-6.80	-7.50	-7.40	-1.496
	Rate less than -2.5 mm/year		% less 2 mm/ year	50%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	50%

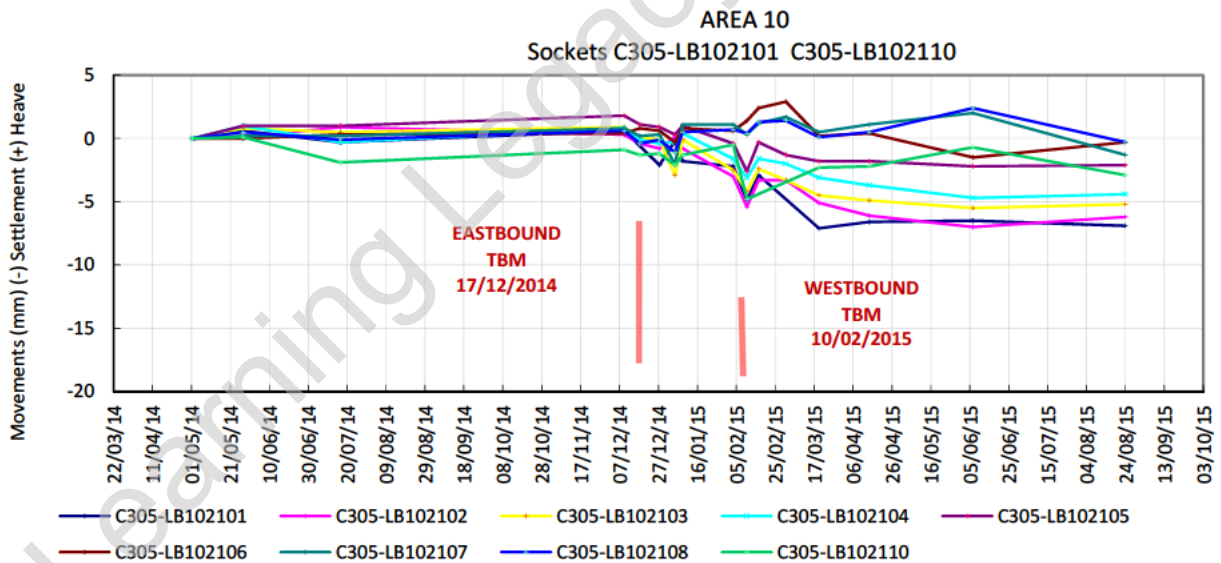
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 50%, whereas 50% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB102101-C305-LB102110



The graph above shows a maximum settlement of -5 mm after the eastbound TBM transit and a -7 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

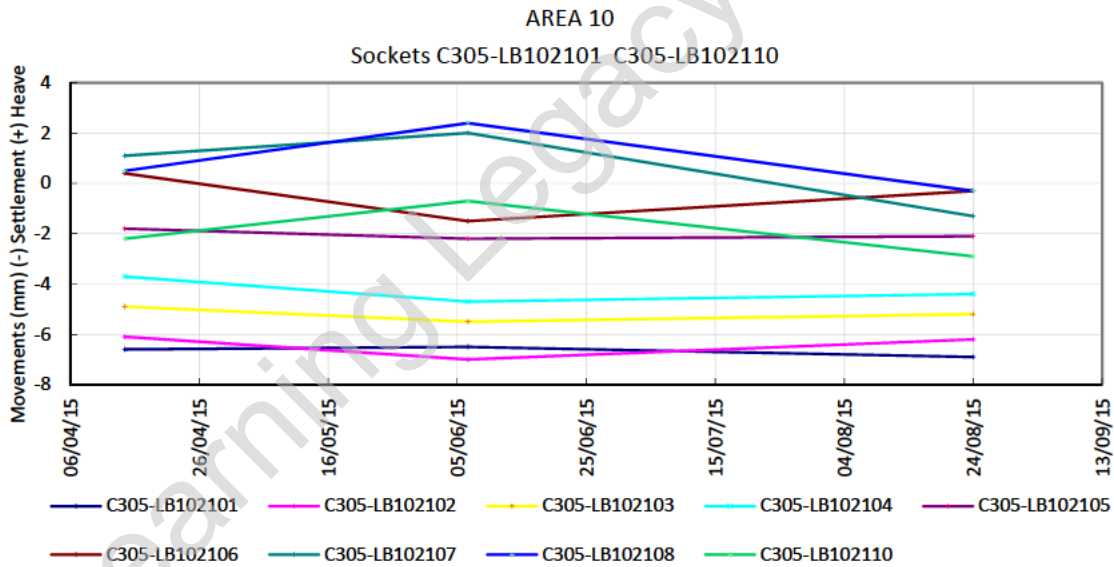
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	14/04/2015	06/06/2015	24/08/2015	
C305-LB102101	-6.60	-6.50	-6.90	-0.909
C305-LB102102	-6.10	-7.00	-6.20	0.022
C305-LB102103	-4.90	-5.50	-5.20	-0.665
C305-LB102104	-3.70	-4.70	-4.40	-1.692
C305-LB102105	-1.80	-2.20	-2.10	-0.735
C305-LB102106	0.40	-1.50	-0.30	-1.378
C305-LB102107	1.10	2.00	-1.30	-7.310
C305-LB102108	0.50	2.40	-0.30	-2.994
C305-LB102110	-2.20	-0.70	-2.90	-2.563
	Rate less than -2.5 mm/year		% less 2 mm/ year	67%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	89%

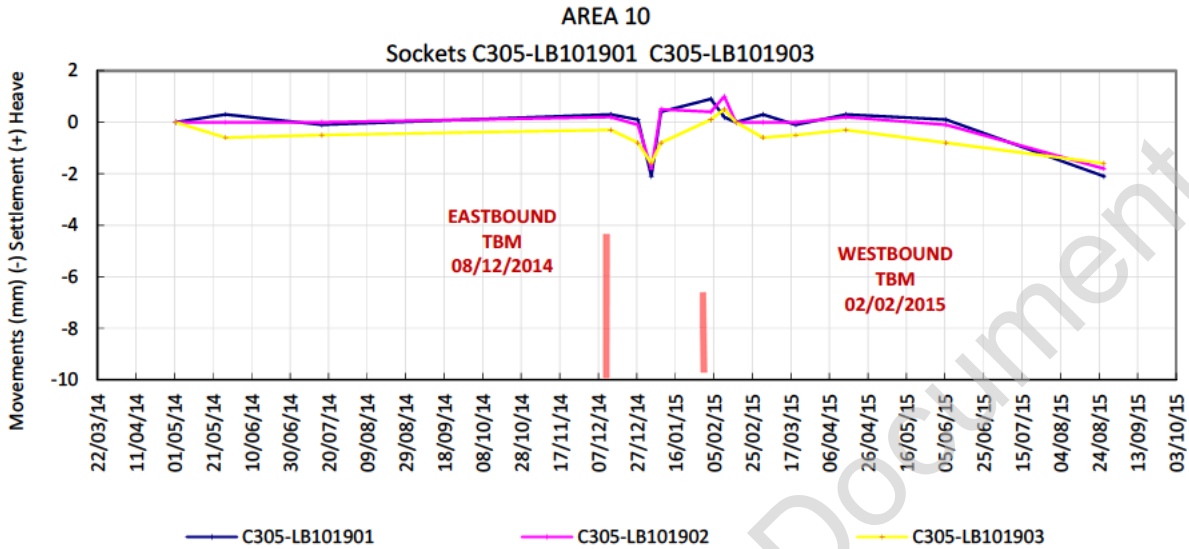
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 67%, whereas 89% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB101901-C305-LB101903



The graph above shows a maximum settlement of -2 mm after the eastbound TBM transit and a -2 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

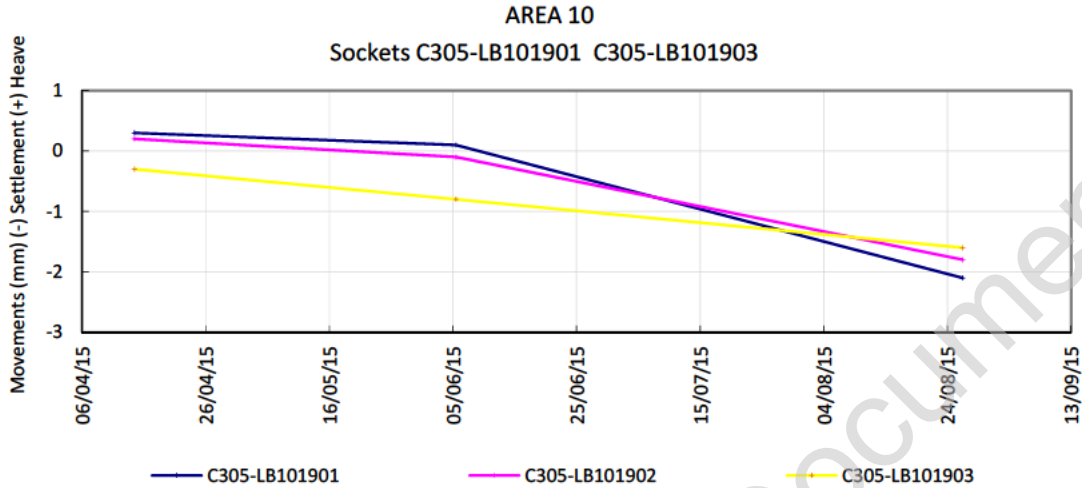
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	14/04/2015	05/06/2015	26/08/2015	
C305-LB101901	0,30	0,10	-2,10	-6,829
C305-LB101902	0,20	-0,10	-1,80	-5,638
C305-LB101903	-0,30	-0,80	-1,60	-3,543
	Rate less than -2.5 mm/year		% less 2 mm/ year	0%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	0%

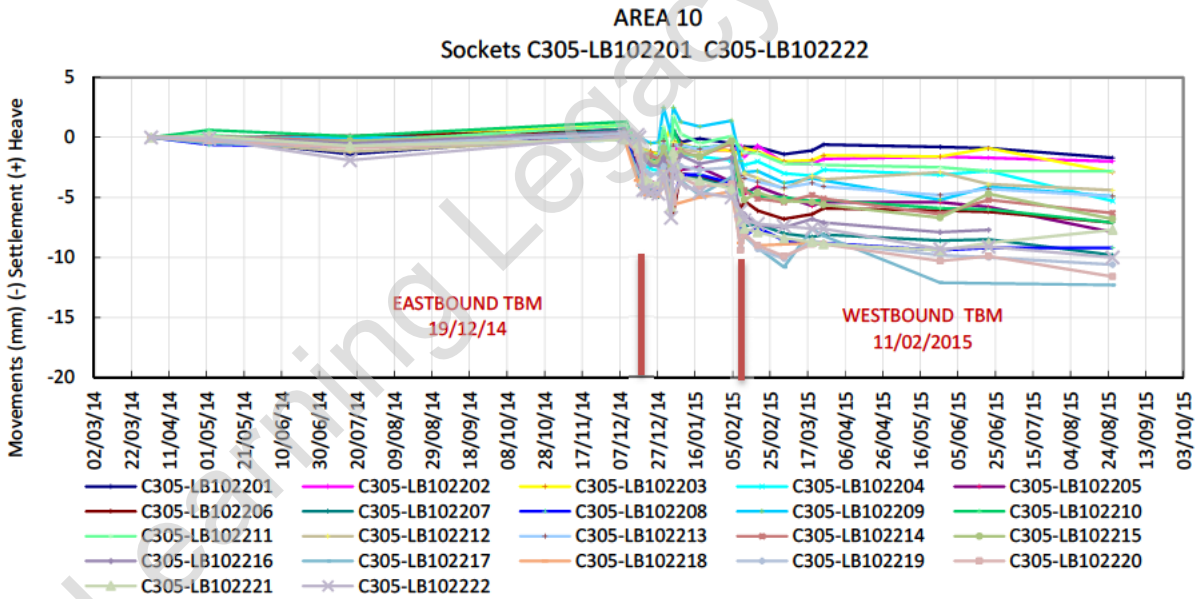
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 0%, whereas 0% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB102201-C305-LB102222



The graph above shows a maximum settlement of -7 mm after the eastbound TBM transit and a -12 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

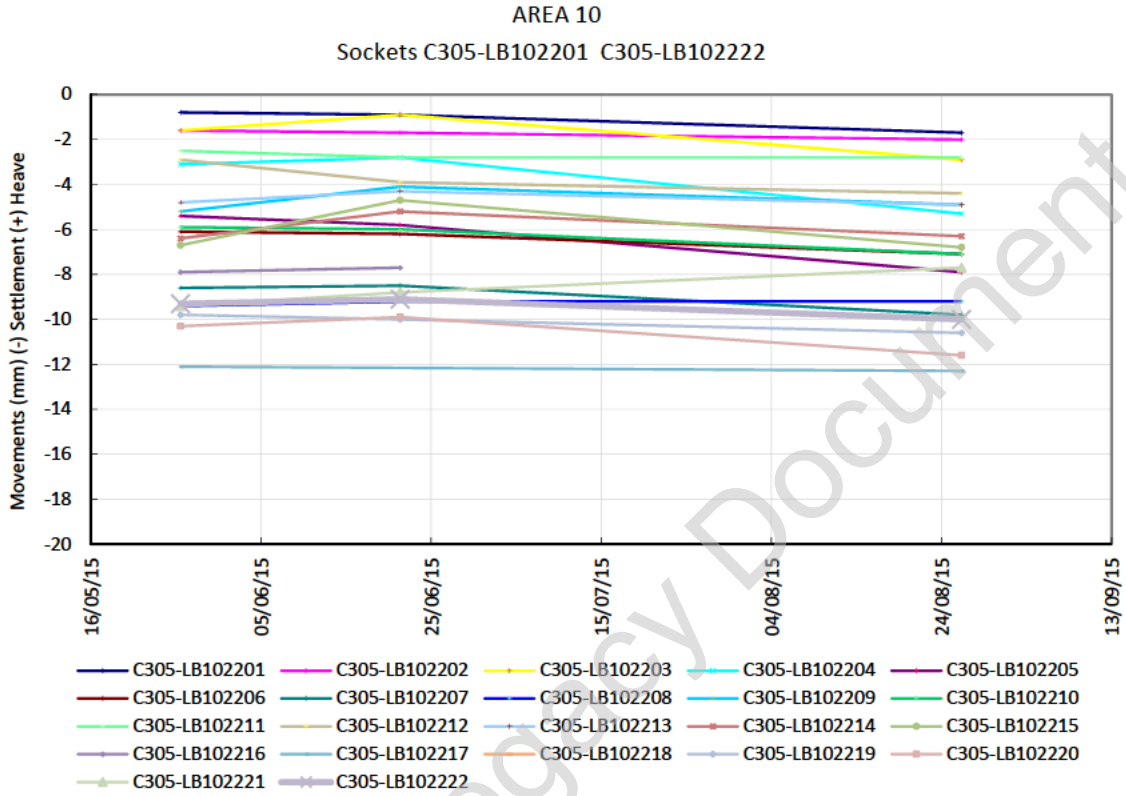
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	26/05/2015	21/06/2015	26/08/2015	
C305-LB102201	-0.80	-0.90	-1.70	-3.745
C305-LB102202	-1.60	-1.70	-2.00	-1.604
C305-LB102203	-1.60	-0.90	-2.90	-6.331
C305-LB102204	-3.10	-2.80	-5.30	-9.749
C305-LB102205	-5.40	-5.80	-7.90	-10.270
C305-LB102206	-6.10	-6.20	-7.10	-4.173
C305-LB102207	-8.60	-8.50	-9.80	-5.248
C305-LB102208	-9.40	-9.20	-9.20	0.638
C305-LB102209	-5.20	-4.10	-4.90	0.085
C305-LB102210	-5.90	-6.00	-7.10	-5.030
C305-LB102211	-2.50	-2.80	-2.80	-0.957
C305-LB102212	-2.90	-3.90	-4.40	-5.333
C305-LB102213	-4.80	-4.30	-4.90	-0.974
C305-LB102214	-6.40	-5.20	-6.30	-0.881
C305-LB102215	-6.70	-4.70	-6.80	-2.610
C305-LB102216	-7.90	-7.70	#N/A	#N/A
C305-LB102217	-12.10	#N/A	-12.30	#N/A
C305-LB102218	#N/A	#N/A	#N/A	#N/A
C305-LB102219	-9.80	-10.00	-10.60	-3.208
C305-LB102220	-10.30	-9.90	-11.60	-6.004
C305-LB102221	-9.40	-8.80	-7.70	6.626
C305-LB102222	-9.30	-9.10	-10.00	-3.216
	Rate less than -2.5 mm/year		% less 2 mm/ year	37%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	53%

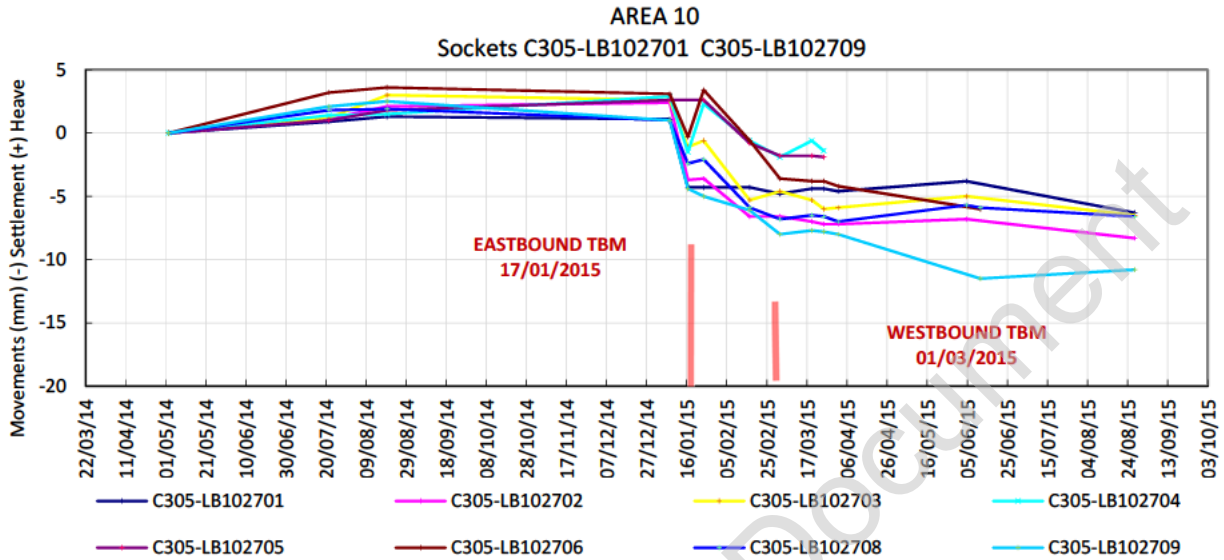
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 37%, whereas 53% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB102701-C305-LB102709



The graph above shows a maximum settlement of -8 mm after the eastbound TBM transit and a -11 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

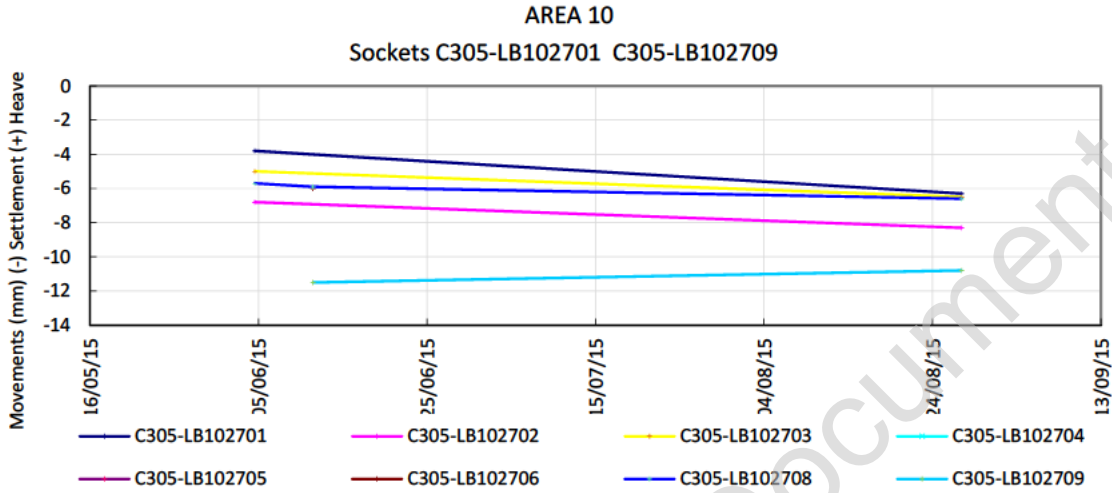
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	04/06/2015	11/06/2015	27/08/2015	
C305-LB102701	-3,80	#N/A	-6,30	-10,877
C305-LB102702	-6,80	#N/A	-8,30	-6,526
C305-LB102703	-5,00	#N/A	-6,50	-6,526
C305-LB102704	#N/A	#N/A	#N/A	#N/A
C305-LB102705	#N/A	#N/A	#N/A	#N/A
C305-LB102706	#N/A	-6,00	#N/A	#N/A
C305-LB102708	-5,70	-5,90	-6,60	-3,668
C305-LB102709	#N/A	-11,50	-10,80	#N/A
	Rate less than -2.5 mm/year		% less 2 mm/ year	0%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	0%

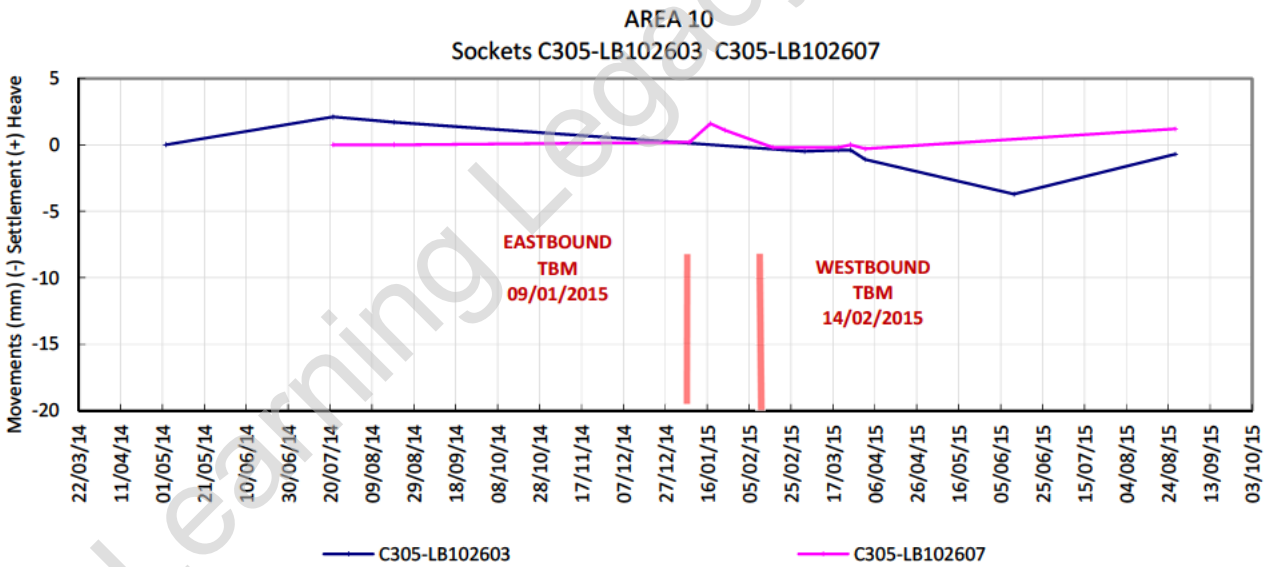
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 0%, whereas 0% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB102603-C305-LB102607



The graph above shows a maximum settlement of -1 mm after the eastbound TBM transit and a -4 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

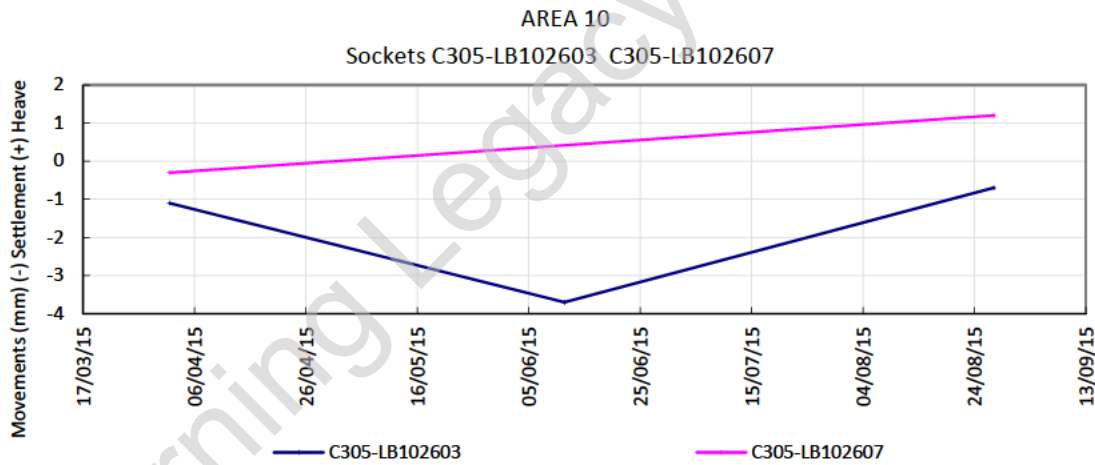
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	01/04/2015	11/06/2015	27/08/2015	
C305-LB102603	-1.10	-3.70	-0.70	1.177
C305-LB102607	-0.30	#N/A	1.20	3.701
	Rate less than -2.5 mm/year		% less 2 mm/ year	100%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	100%

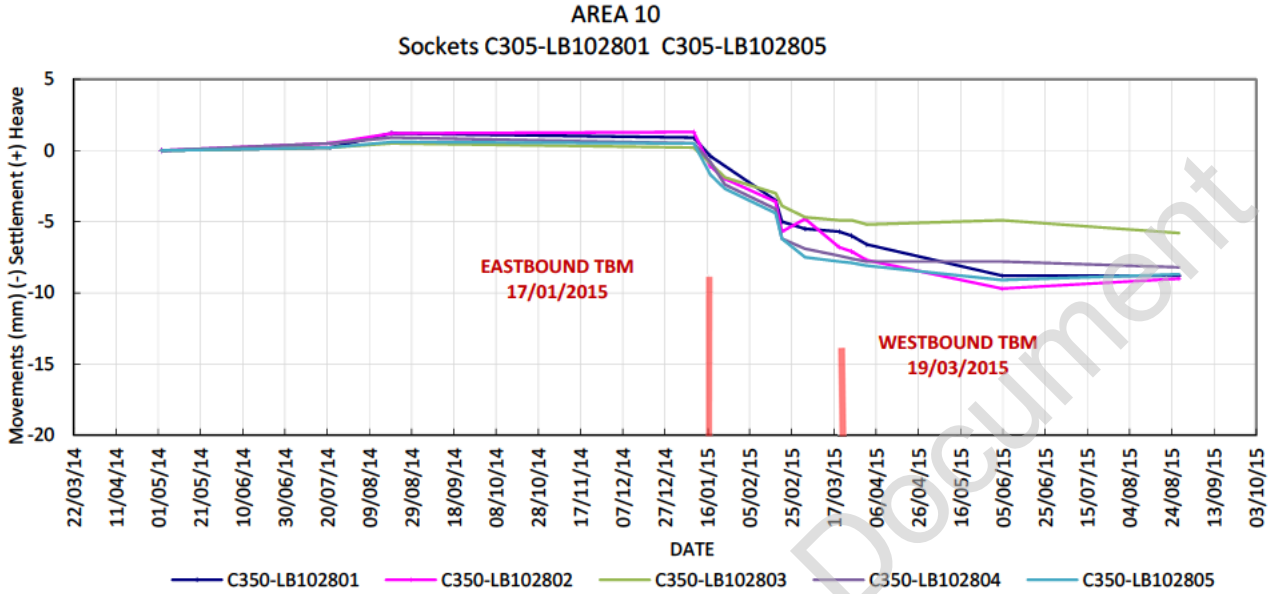
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 100%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB102801-C305-LB102805



The graph above shows a maximum settlement of -8 mm after the eastbound TBM transit and a -9 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

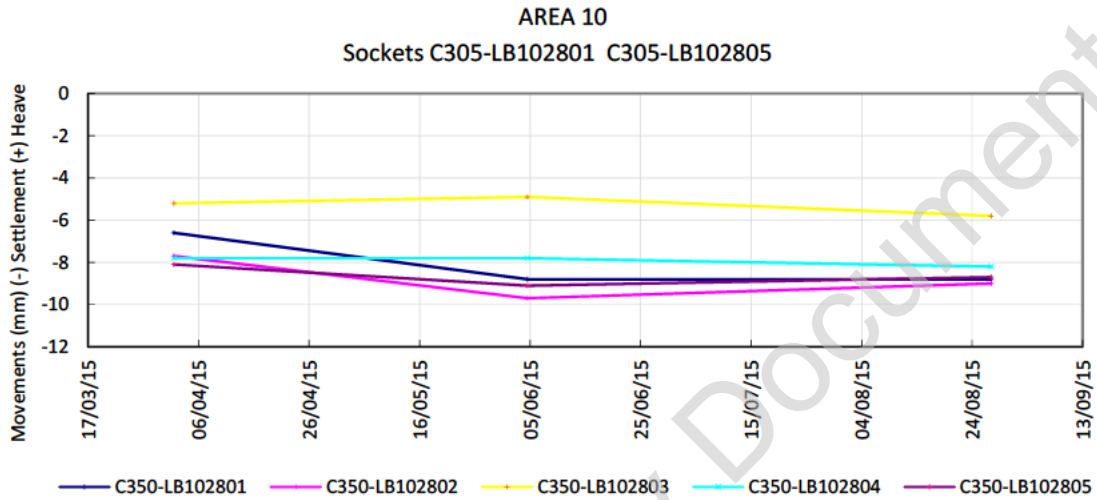
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	01/04/2015	04/06/2015	27/08/2015	
C305-LB102801	-6,60	-8,80	-8,80	-5,153
C305-LB102802	-7,70	-9,70	-9,00	-2,891
C305-LB102803	-5,20	-4,90	-5,80	-1,603
C305-LB102804	-7,80	-7,80	-8,20	-1,025
C305-LB102805	-8,10	-9,10	-8,70	-1,317
	Rate less than -2.5 mm/year		% less 2 mm/ year	80%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	100%

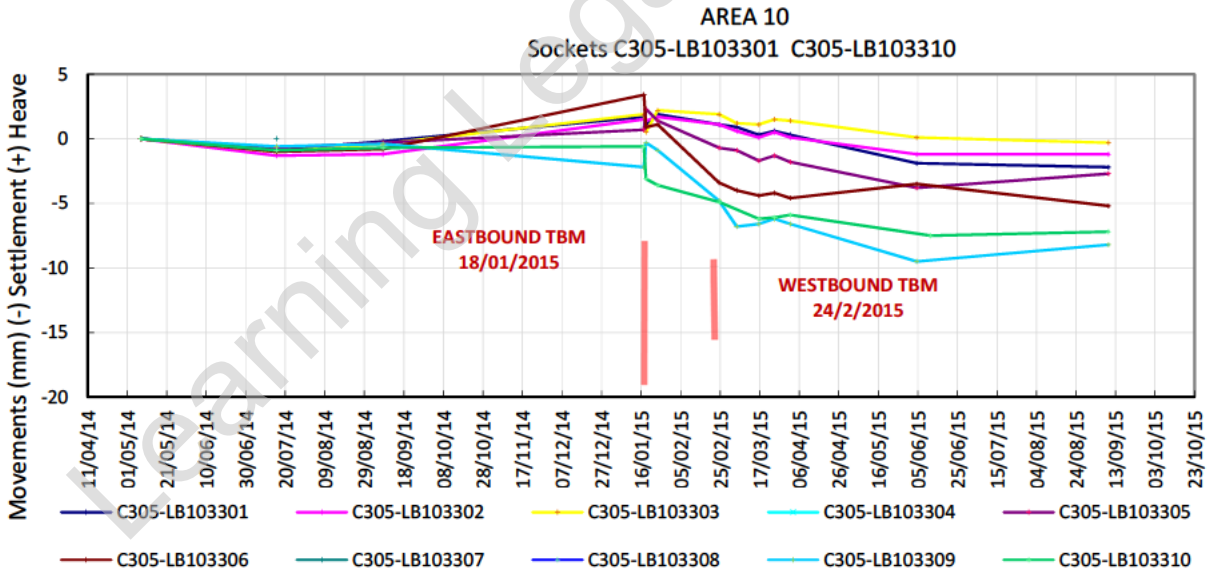
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 80%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB103301-C305-LB103310



The graph above shows a maximum settlement of -5 mm after the eastbound TBM transit and a -10 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

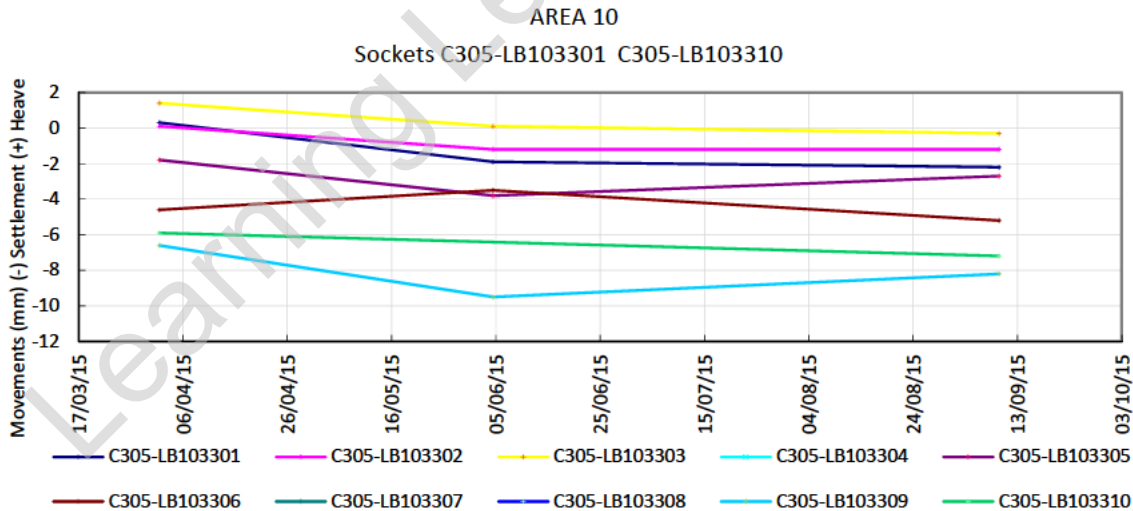
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)				mm/year
	01/04/2015	04/06/2015	11/06/2015	09/09/2015	
C305-LB103301	0.3	-1.90	#N/A	-2.20	-1.129
C305-LB103302	0.1	-1.20	#N/A	-1.20	0.000
C305-LB103303	1.4	0.10	#N/A	-0.30	-1.505
C305-LB103304	#N/A	#N/A	#N/A	#N/A	#N/A
C305-LB103305	-1.8	-3.80	#N/A	-2.70	4.139
C305-LB103306	-4.6	-3.50	#N/A	-5.20	-6.396
C305-LB103307	#N/A	#N/A	#N/A	#N/A	#N/A
C305-LB103308	#N/A	#N/A	#N/A	#N/A	#N/A
C305-LB103309	-6.6	-9.50	#N/A	-8.20	4.891
C305-LB103310	-5.9	#N/A	#N/A	-7.20	1.217
	Rate greater than -3.5 mm/year			% less 2 mm/ year	86%
	Rate greater than -3.5 mm/year			% less 3 mm/ year	86%

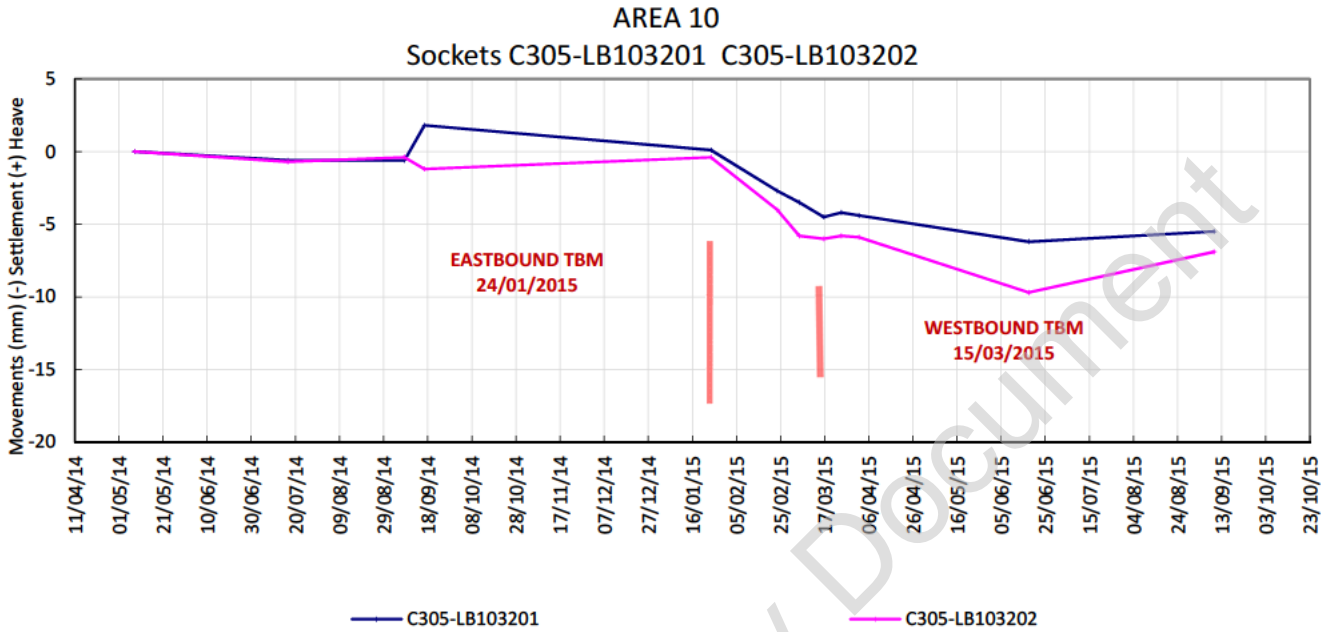
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 86%, whereas 86% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB103201-C305-LB103202



The graph above shows a maximum settlement of -6 mm after the eastbound TBM transit and a -10 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

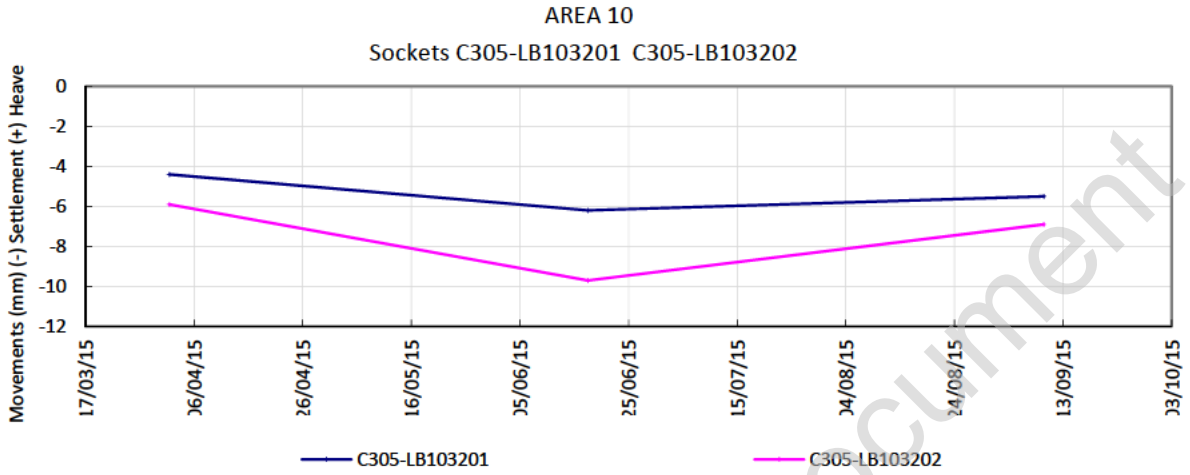
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	01/04/2015	17/06/2015	09/09/2015	
C305-LB103201	-4,40	-6,20	-5,50	-4,061
C305-LB103202	-5,90	-9,70	-6,90	-2,948
	Rate less than -2.5 mm/year		% less 2 mm/ year	0%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	50%

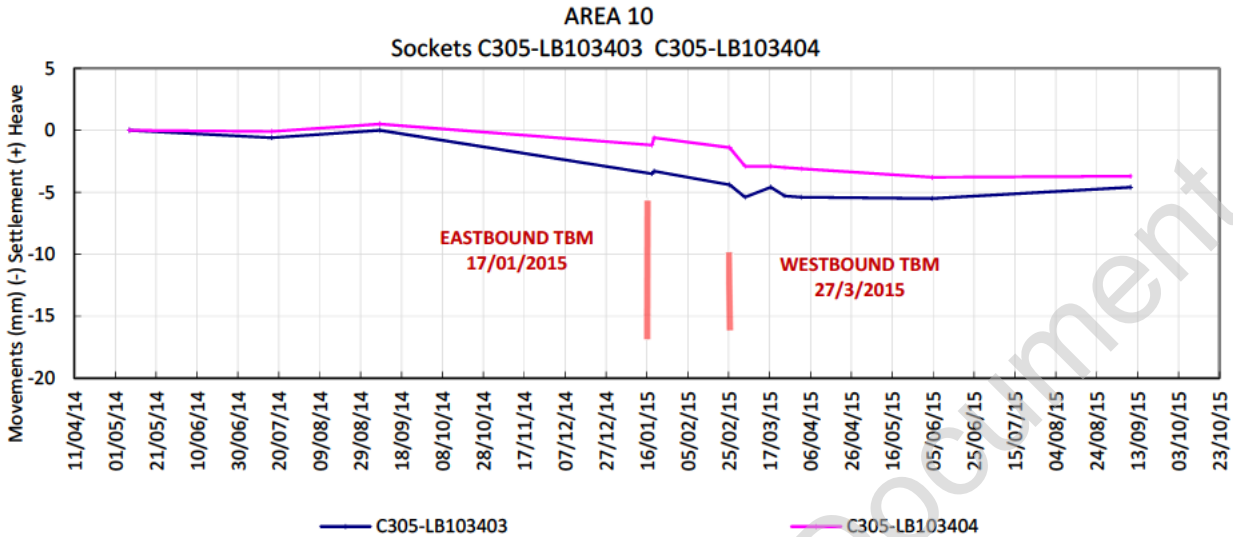
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 0%, whereas 50% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB103403-C305-LB103404



The graph above shows a maximum settlement of -4 mm after the eastbound TBM transit and a -5 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

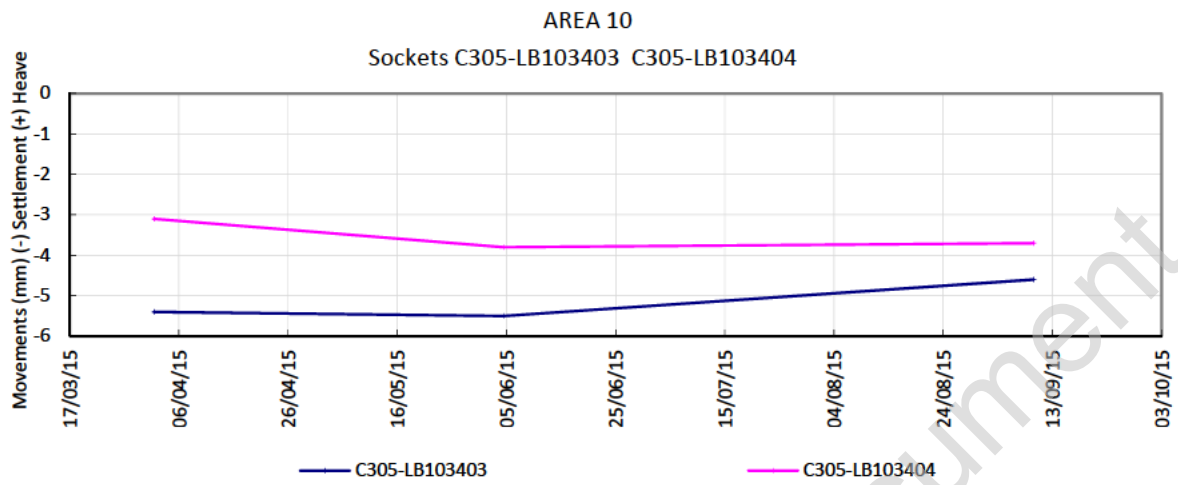
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	01/04/2015	04/06/2015	09/09/2015	
C305-LB103403	-5.40	-5.50	-4.60	1.940
C305-LB103404	-3.10	-3.80	-3.70	-1.218
	Rate less than -2.5 mm/year		% less 2 mm/ year	100%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	100%

Note: All the movements are in mm. (-) Settlement / (+) Heave

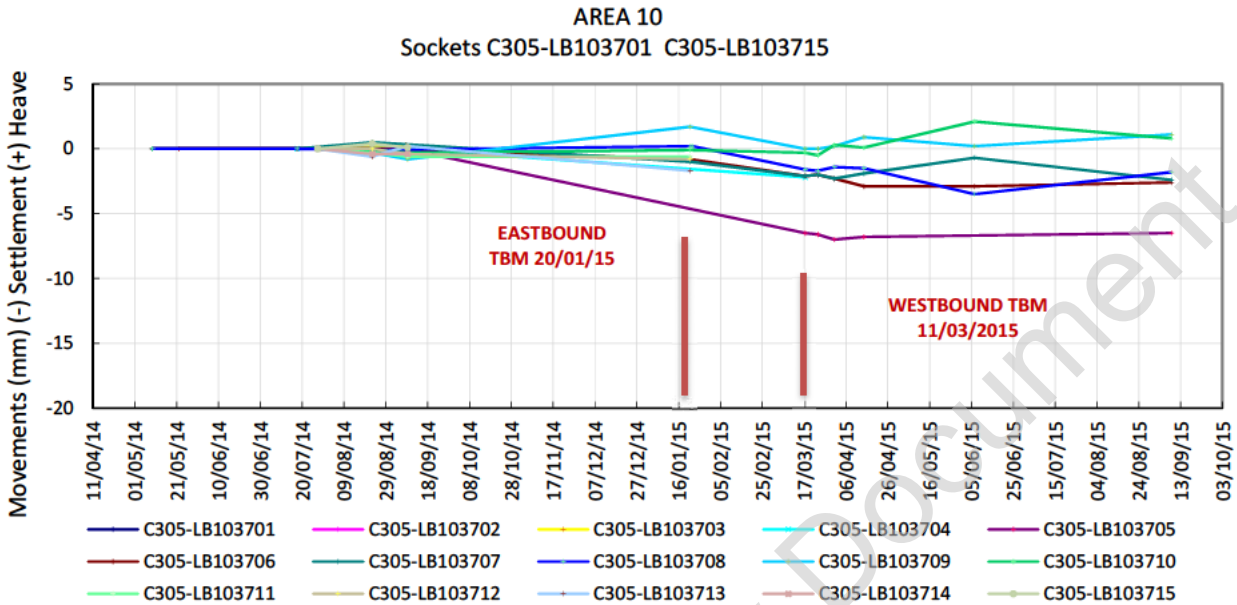
The percentage of levelling points with a settlement rate less than 2 mm/year is 100%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



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C305-LB103701-C305-LB103715



The graph above shows a maximum settlement of -6 mm after the eastbound TBM transit and a -7 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

The table below shows the annual rate for the sockets in this array.

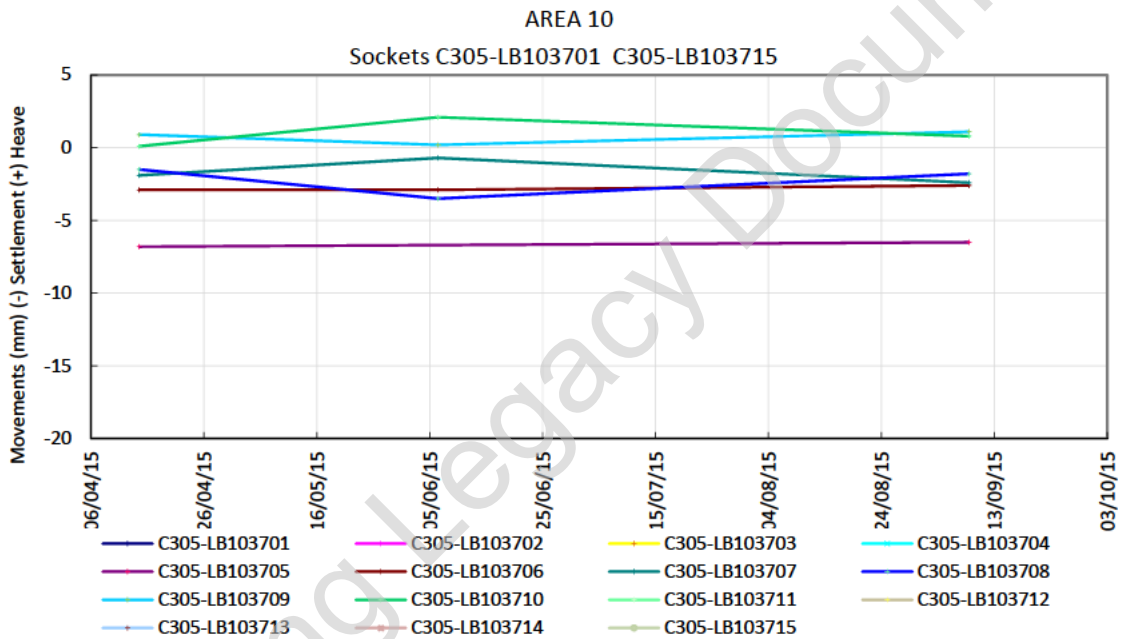
	Registered movement (mm)			mm/year
	14/04/2015	06/06/2015	08/09/2015	
C305-LB103701	#N/A	#N/A	#N/A	#N/A
C305-LB103702	#N/A	#N/A	#N/A	#N/A
C305-LB103703	#N/A	#N/A	#N/A	#N/A
C305-LB103704	#N/A	#N/A	#N/A	#N/A
C305-LB103705	-6.80	#N/A	-6.50	0.745
C305-LB103706	-2.90	-2.90	-2.60	0.794
C305-LB103707	-1.90	-0.70	-2.40	-1.865
C305-LB103708	-1.50	-3.50	-1.80	0.109
C305-LB103709	0.90	0.20	1.10	0.845
C305-LB103710	0.10	2.10	0.80	0.949
C305-LB103711	#N/A	#N/A	#N/A	#N/A
C305-LB103712	#N/A	#N/A	#N/A	#N/A
C305-LB103713	#N/A	#N/A	#N/A	#N/A
C305-LB103714	#N/A	#N/A	#N/A	#N/A

	Registered movement (mm)			mm/year
	14/04/2015	06/06/2015	08/09/2015	
C305-LB103715	#N/A	#N/A	#N/A	#N/A
	Rate less than -2.5 mm/year			% less 2 mm/ year
	Rate greater than -3.5 mm/year			% less 3 mm/ year

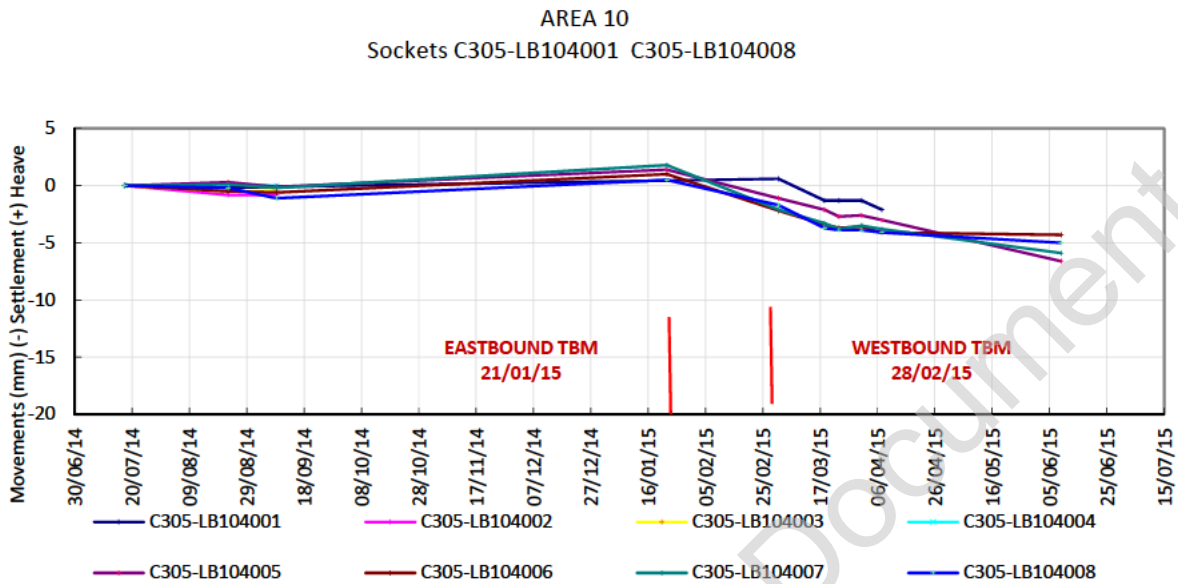
Note: All the movements are in mm. (-) Settlement / (+) Heave

The percentage of levelling points with a settlement rate less than 2 mm/year is 100%, whereas 100% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



C305-LB104001-C305-LB104008



The graph above shows a maximum settlement of -2 mm after the eastbound TBM transit and a -7 mm total maximum settlement after the westbound TBM transit.

To analyse whether the rate of change in the data has reached an acceptably small rate, the last three readings were used to calculate the annual projection.

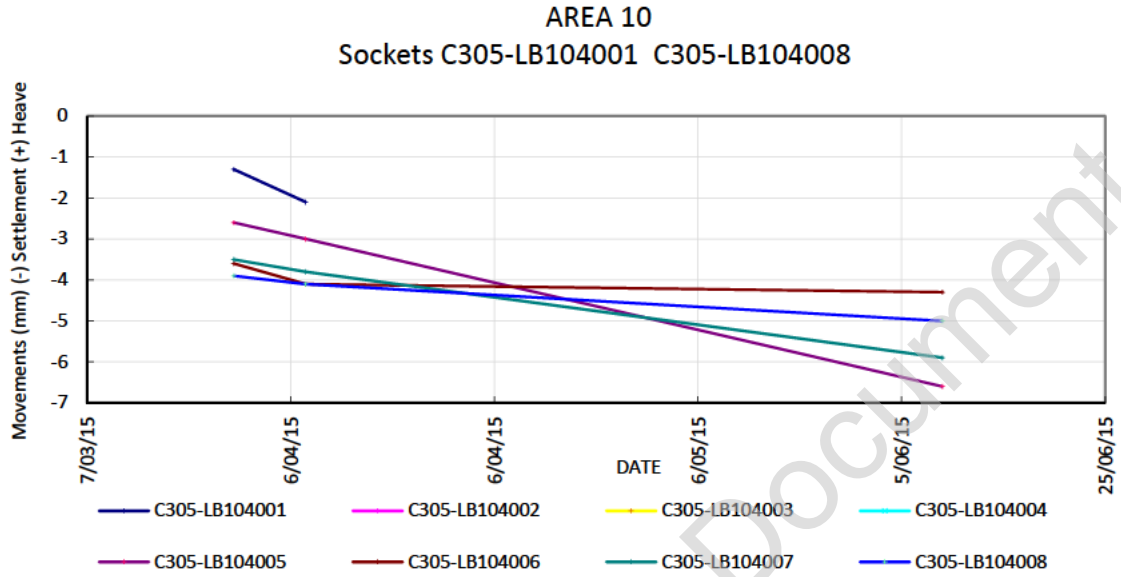
The table below shows the annual rate for the sockets in this array.

	Registered movement (mm)			mm/year
	31/03/2015	07/04/2015	09/06/2015	
C305-LB104001	-1,30	-2,10		-41,370
C305-LB104002	#N/A	#N/A	#N/A	#N/A
C305-LB104003	#N/A	#N/A	#N/A	#N/A
C305-LB104004	#N/A	#N/A	#N/A	#N/A
C305-LB104005	-2,60	-3,00	-6,60	-20,994
C305-LB104006	-3,60	-4,10	-4,30	-2,685
C305-LB104007	-3,50	-3,80	-5,90	-12,459
C305-LB104008	-3,90	-4,10	-5,00	-5,566
	Rate less than -2.5 mm/year		% less 2 mm/ year	0%
	Rate greater than -3.5 mm/year		% less 3 mm/ year	20%

Note: All the movements are in mm. (-) Settlement / (+) Heave

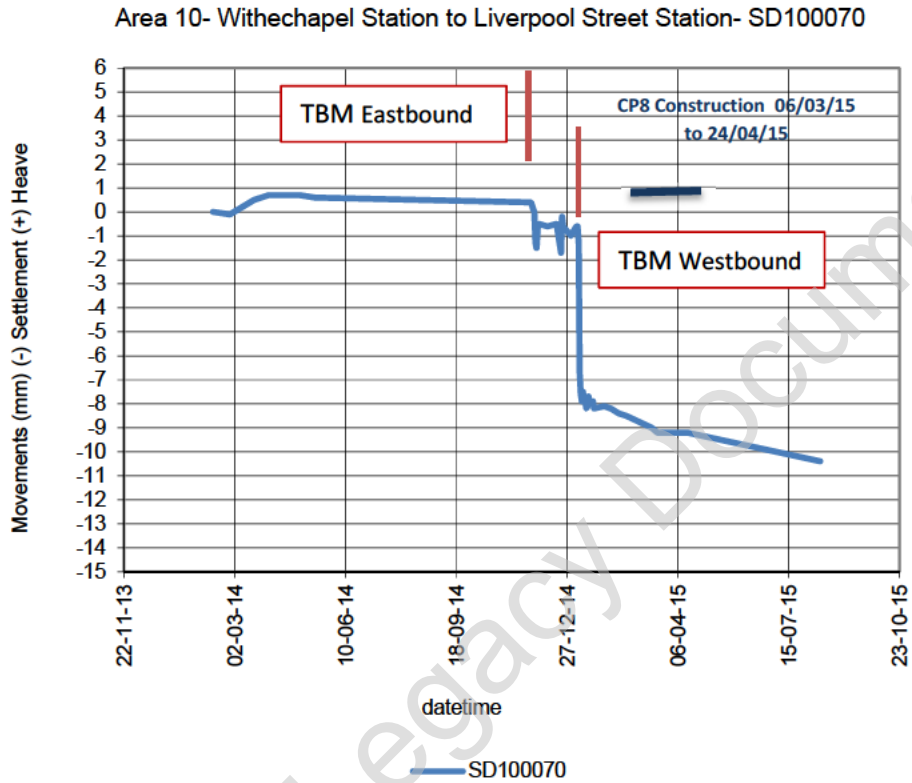
The percentage of levelling points with a settlement rate less than 2 mm/year is 0%, whereas 20% are less than 3 mm/year.

The plot below shows the trend line adjustment for the sockets in this array.



SHALLOW DATUM

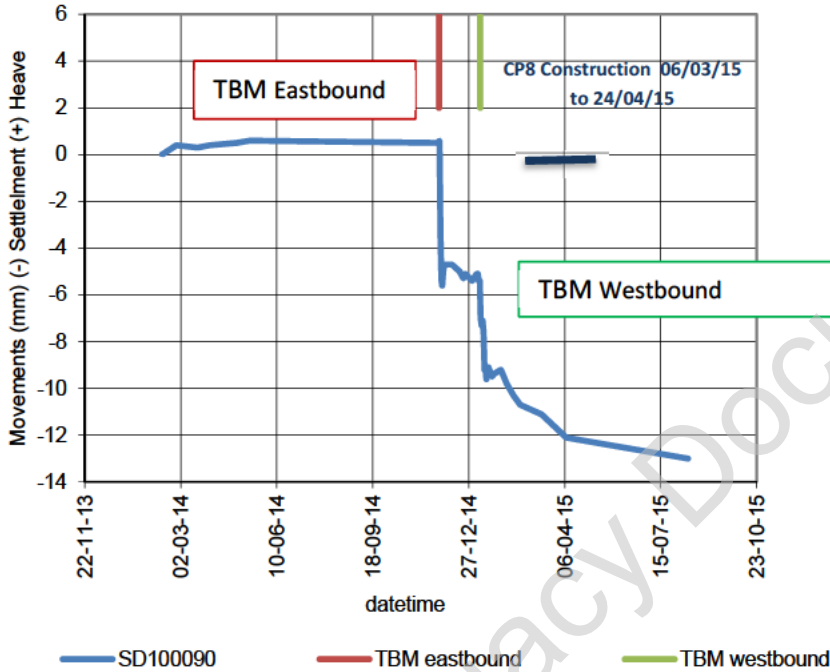
SD100070



The graph above, for shallow datum C305-SD100070, shows an absolute settlement of -2 mm after the eastbound TBM transit and -8 mm after the westbound TBM transit. A total maximum absolute settlement of -10 mm settlement was recorded after CP8 works.

SD100090

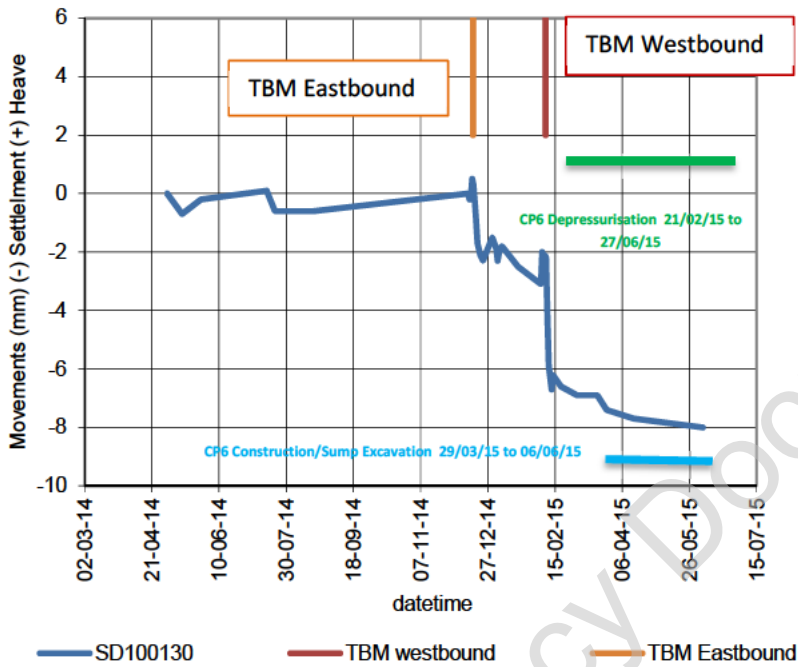
Area 10- Withechapel Station to Liverpool Street Station - SD100090



The graph above, for shallow datum C305-SD100090, shows an absolute settlement of -6 mm and -10 mm after the eastbound TBM and westbound TBM transit, respectively; and a total maximum absolute settlement of -13 mm settlement after CP8 works.

SD100130

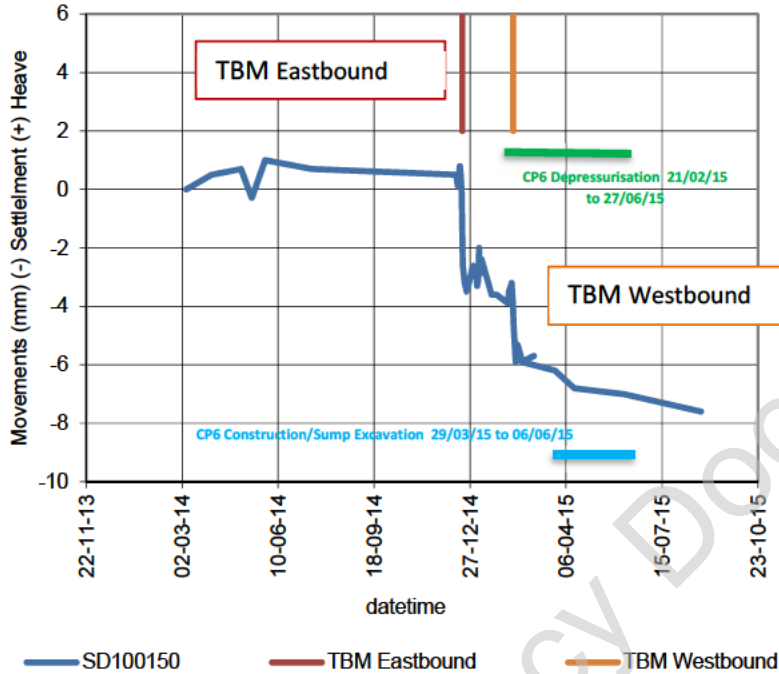
Area 10-Whitechapel Station to Liverpool Street Station-SD100130



The graph above, for shallow datum C305-SD100130, shows an absolute settlement of -3 mm and -7 mm after the eastbound TBM and westbound TBM transit, respectively; and a total maximum absolute settlement of -8 mm settlement after CP6 works.

SD100150

Area 10-Whitechapel Station to Liverpool Street Station-SD100150



The graph above, for shallow datum C305-SD100150, shows an absolute settlement of -4 mm and -6 mm after the eastbound TBM and westbound TBM transit, respectively; and a total maximum absolute settlement of -8 mm settlement after CP6 works.

INCLINOMETERS

Two inclinometers were installed. The figures below show the orientation of "A" and "B" AXIS and the distance of the instrument from the nearest tunnel drive.

Movements in A+ AXIS are always towards the expected AXIS, ie: towards the tunnel AXIS, and the B+ AXIS is clockwise +90° from the A+ axis (see orientation sketch, below right).

Orientation of the probe and casing:

A axis: the direction of the anticipated movement

A+ = the orientation of the casing groove into which the leading wheel of the inclinometer probe is located on the first run of a set of readings. This is also the orientation of the primary sensor

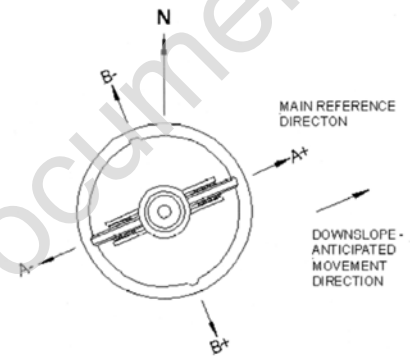
A- = the orientation of the casing groove into which the leading wheel of the inclinometer probe is located on the second run of a set of readings. This is also the orientation of the primary sensor

B+ = the orientation of the secondary sensor after the first run of a set of readings.

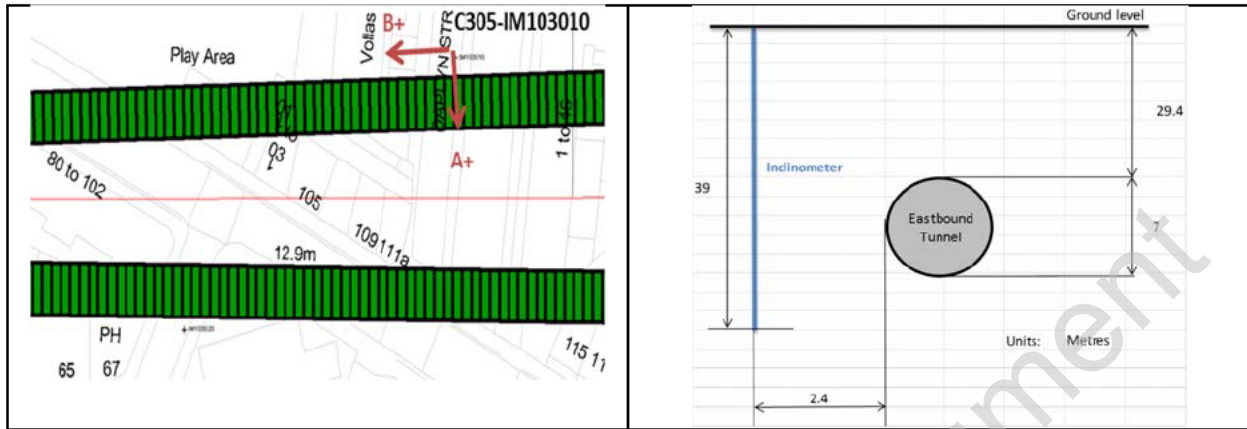
B- = the orientation of the secondary sensor after the second run of a set of readings

The first reading of the baseline was an average of the three commissioning readings taken prior baseline readings.

Corrections were applied to the raw data when using different probes. This correction was calculated thus; an average of the raw readings along the inclinometer was obtained in each case. Then the difference between the average values before and after the change of the probes was calculated. This difference was applied to the readings taken with the different probe in each direction.



C305-IM103010 (Eastbound tunnel)



The dates when the TBMs were immediately adjacent to the inclinometer are as follows:

Eastbound Drive-Y	25/11/2014
Westbound Drive-Y	06/01/2015

No correction has been applied to the axis probe readings for zero shift. It plays no part in the deflection or profile calculation and has no effect on the accuracy of the probe. No corrections have been applied for systematic errors.

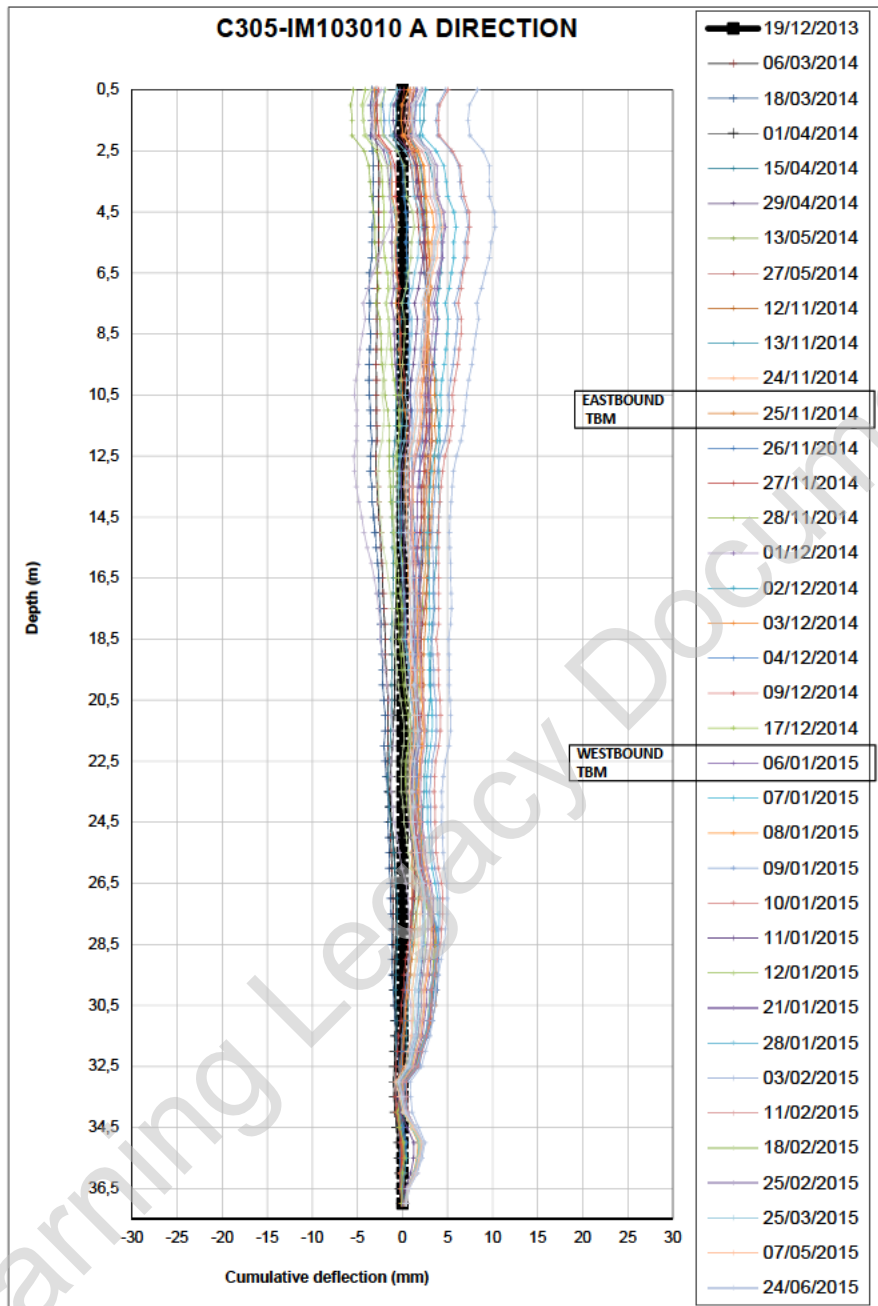
For the inclinometer C305-IM103010 different probes have been used. Related correction factors are presented in the table below:

CHANGE OF INCLINOMETERS AREA 10	
ID Sensor	C305-IM103010
Serial number	DI1217/1144940
Date	01/04/2014
A+	-164
A-	-179
B+	156
B-	142

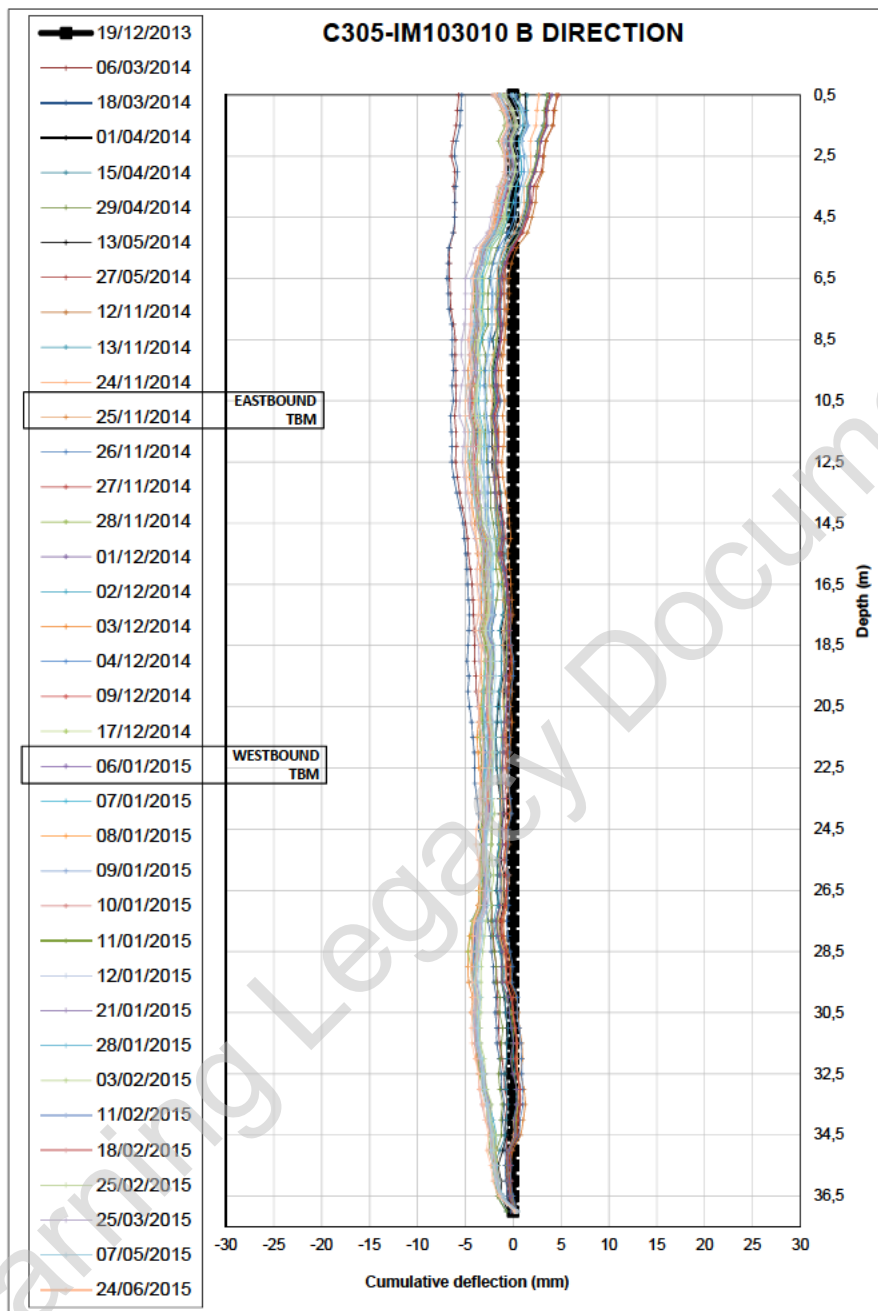
An evaluation of the data "checksum" has been carried out in order to find errors or erroneous readings. The two values obtained in diametrically opposite directions and at the same depth have been added and checked that these values vary by about +/- 20 digits around the average value. This interval can be larger for the axis B due to the required wheel tolerance in the track. That procedure have been carried out after the course of the survey.

Note: In a meeting between the PM, the Contractor & the Designer, dated 17 March 2016, it was agreed that DSJV will provide a report on inclinometers (*"INCLINOMETERS C-305 CHECKSUM AND TWISTING SPIRAL VERIFICATION: C305-DSJ-C2-RGN-CRG03-50373"*), which will include all raw data on excel sheet with dates of different probes used etc.

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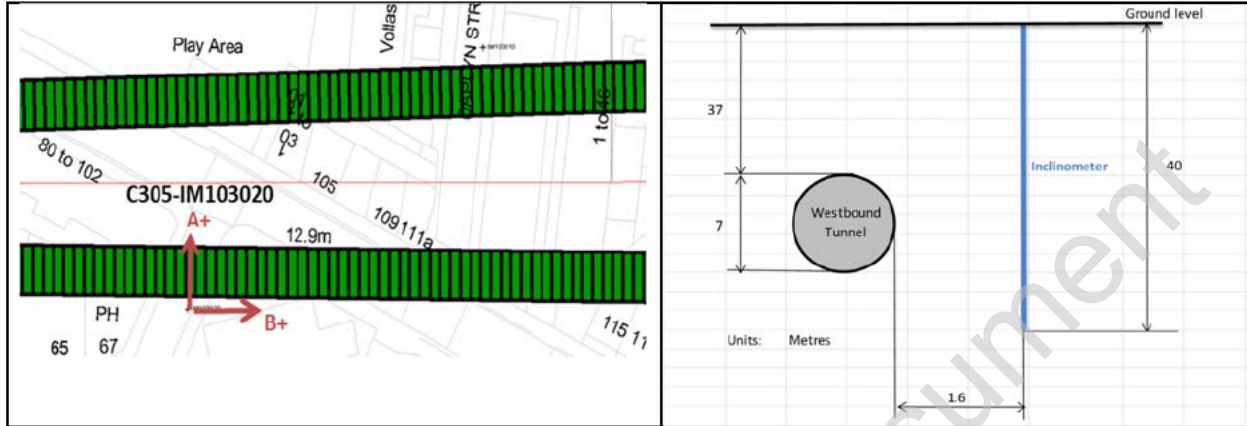


No significant movements have been recorded during TBMs passage (values between +5 mm and -5 mm).



No significant movements have been recorded during TBMs passage (values between +5 mm and -5 mm).

C305-IM103020 (Westbound tunnel)



The dates when the TBMs were immediately adjacent to the inclinometer are as follows:

Eastbound Drive-Y	27/11/2014
Westbound Drive-Y	10/01/2015

No correction has been applied to the axis probe readings for zero shift. It plays no part in the deflection or profile calculation and has no effect on the accuracy of the probe. No corrections have been applied for systematic errors.

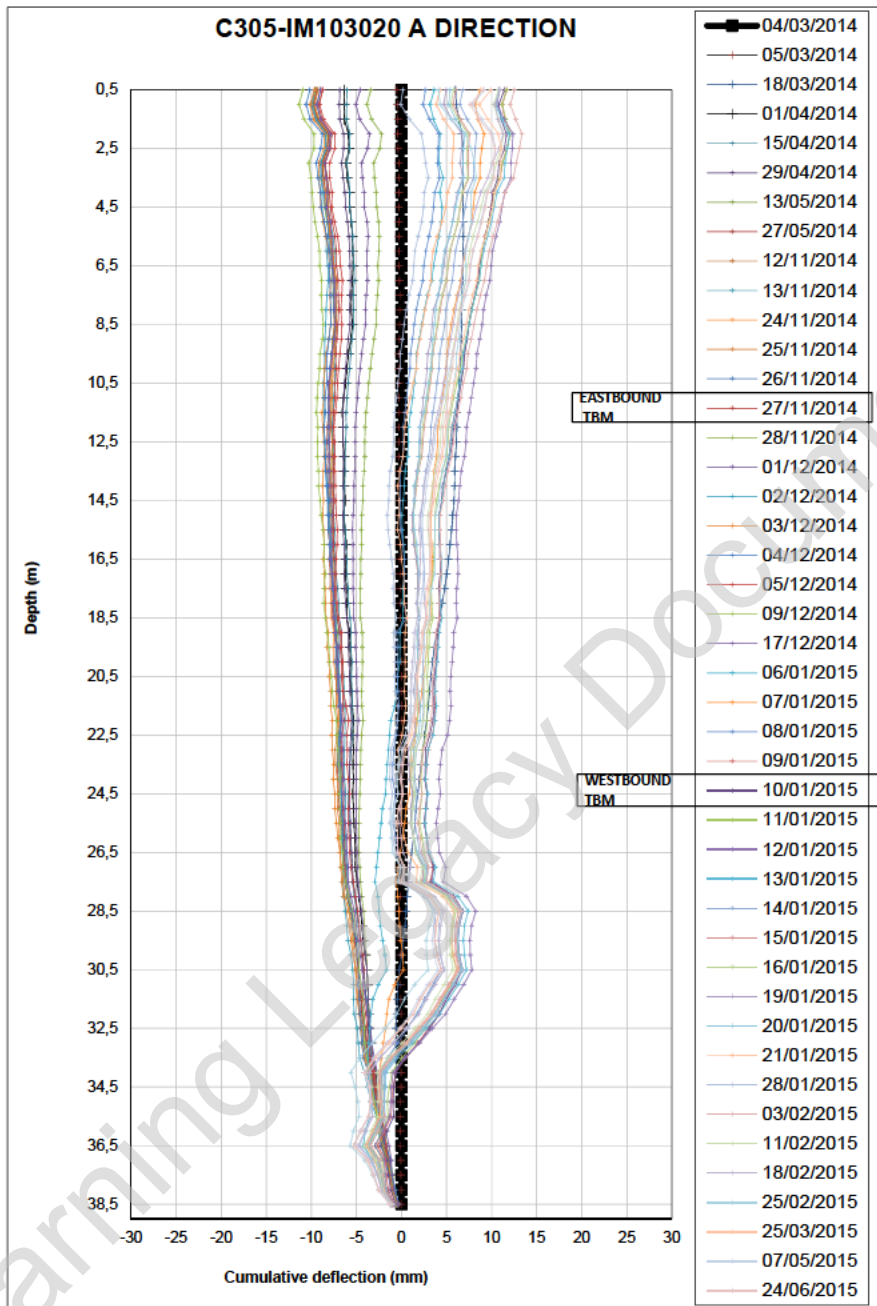
For the inclinometer C305-IM103020 different probes have been used. Related correction factors are presented in the table below:

CHANGE OF INCLINOMETERS AREA 10	
ID Sensor	C305-IM103020
Serial number	DI1217/1144940
Date	01/04/2014
A+	-160
A-	-182
B+	148
B-	147

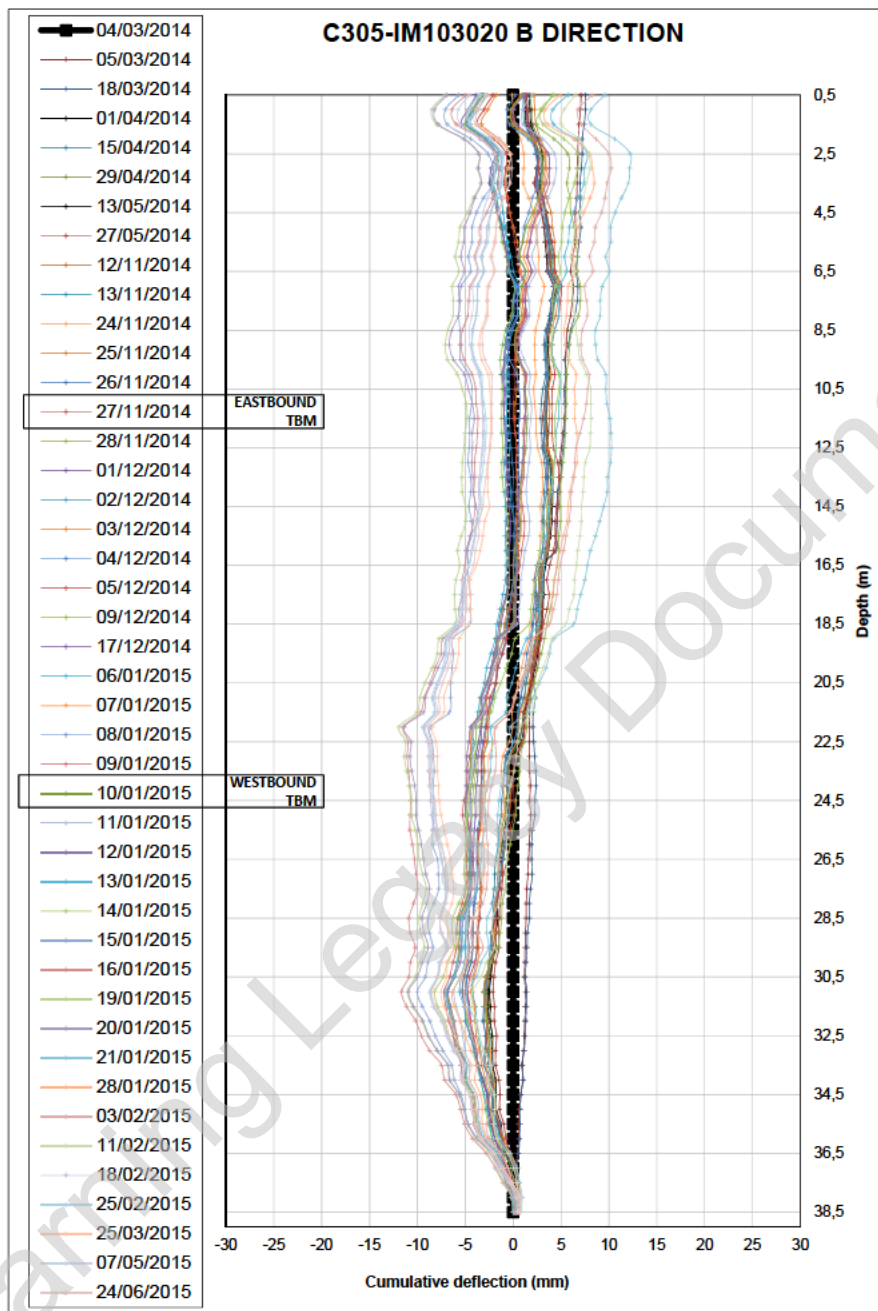
An evaluation of the data "checksum" has been carried out in order to find errors or erroneous readings. The two values obtained in diametrically opposite directions and at the same depth have been added and checked that these values vary by about +/- 20 digits around the average value. This interval can be larger for the axis B due to the required wheel tolerance in the track. That procedure have been carried out after the course of the survey.

Note: In a meeting between the PM, the Contractor & the Designer, dated 17 March 2016, it was agreed that DSJV will provide a report on inclinometers (*"INCLINOMETERS C-305 CHECKSUM AND TWISTING SPIRAL VERIFICATION: C305-DSJ-C2-RGN-CRG03-50373"*), which will include all raw data on excel sheet with dates of different probes used etc.

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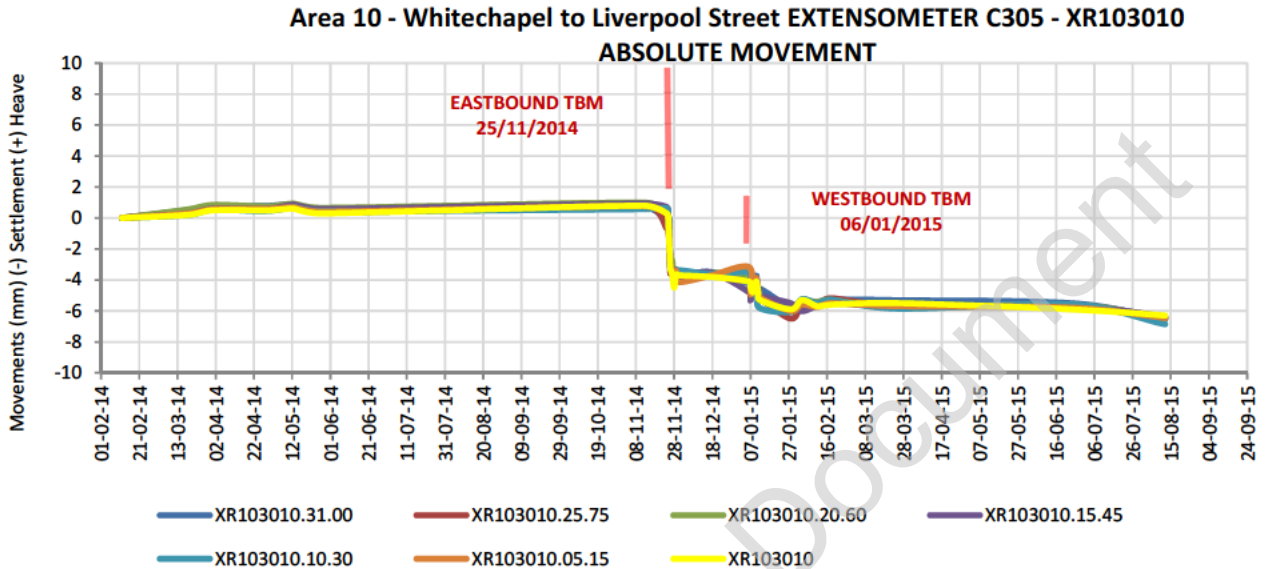
No significant changes have been recorded during TBMs passage (values between +10 mm and -10 mm).



No significant changes have been recorded during TBMs passage (values between +10 mm and -10 mm).

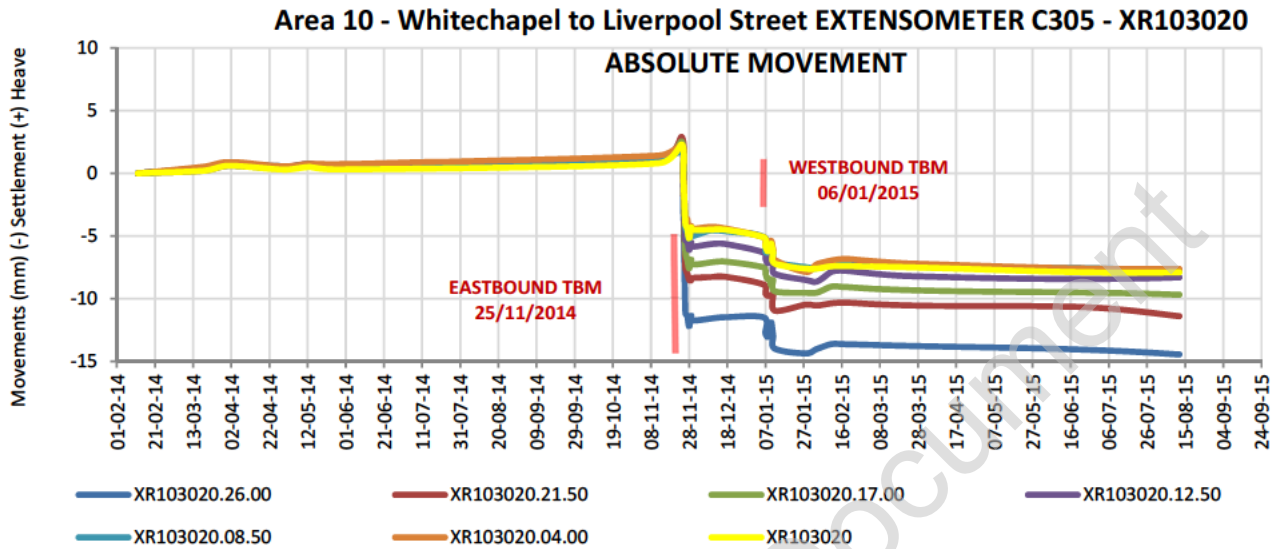
ROD EXTENSOMETERS

C305-XR103010 (Eastbound tunnel)



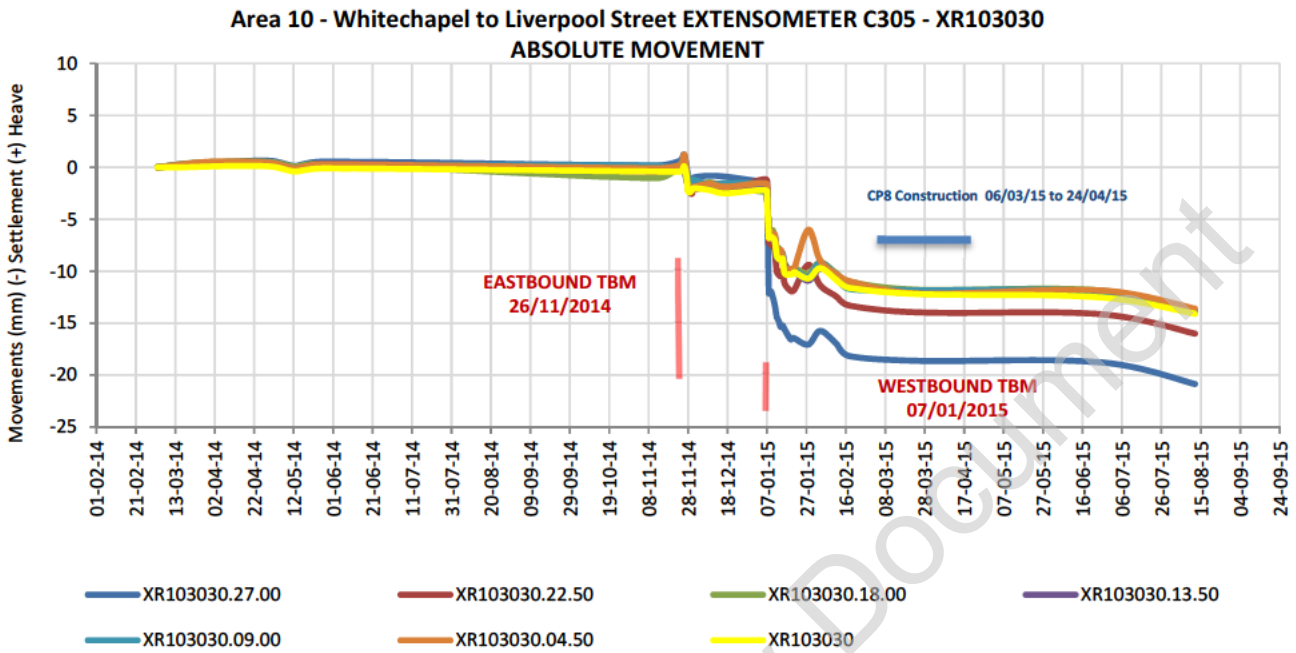
The extensometer C305-XR103010, referred to Eastbound tunnel, showed a maximum -4.5 mm settlement after eastbound TBM passage and a total maximum settlement of -7 mm after westbound TBM passage.

C305-XR103020 (Eastbound tunnel)



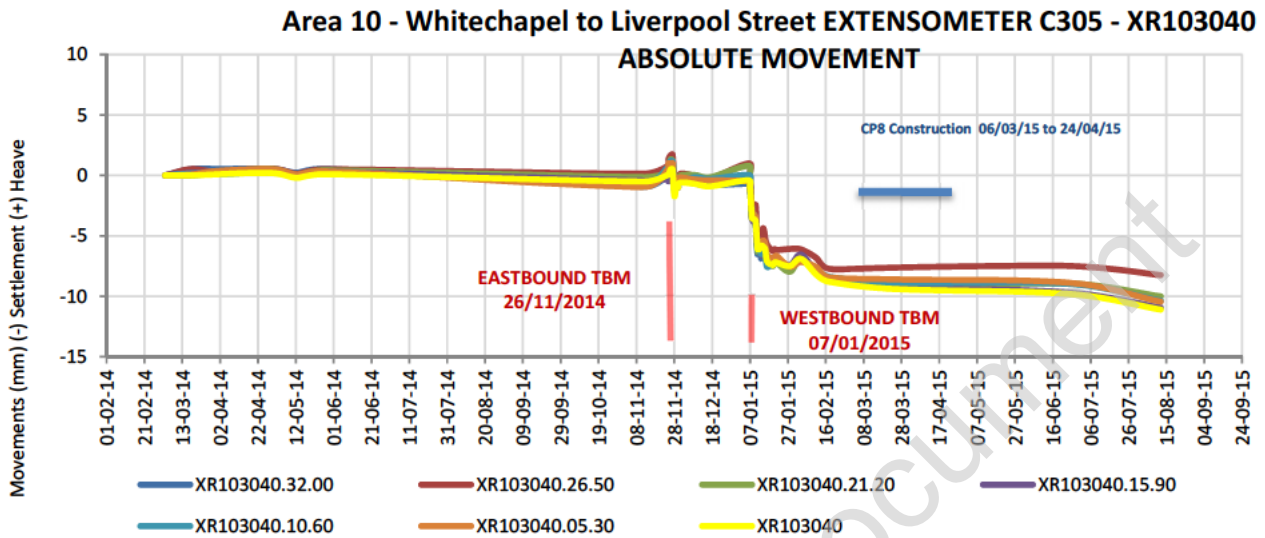
The extensometer C305-XR103020, referred to Eastbound tunnel, showed a maximum -12 mm settlement after eastbound TBM passage and a total maximum settlement of -14 mm after westbound TBM passage.

C305-XR103030 (Westbound tunnel)



The extensometer C305-XR103030, referred to Westbound tunnel, showed a maximum -13 mm settlement after eastbound TBM passage and a total maximum settlement of -21 mm after westbound TBM passage and CP8 works.

C305-XR103040 (Westbound tunnel)



The extensometer C305-XR103040, referred to Westbound tunnel, showed a maximum -7 mm settlement after eastbound TBM passage and a total maximum settlement of -11 mm after westbound TBM passage and CP8 works.

8. SUMMARY STATEMENT

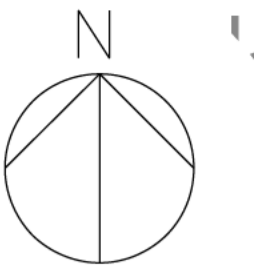
It has been agreed between the Project Manager, the Designer, the Contractor and the Sub Contractor that the instrumentation covered herein, for monitoring ground movement effects of Crossrail works, including long term effects, can be closed out for decommissioning as the trend of the monitoring points was approaching or had achieved the specified 2mm/yr settlement rate.

Minutes of the Close Out meeting are attached as appendix C.

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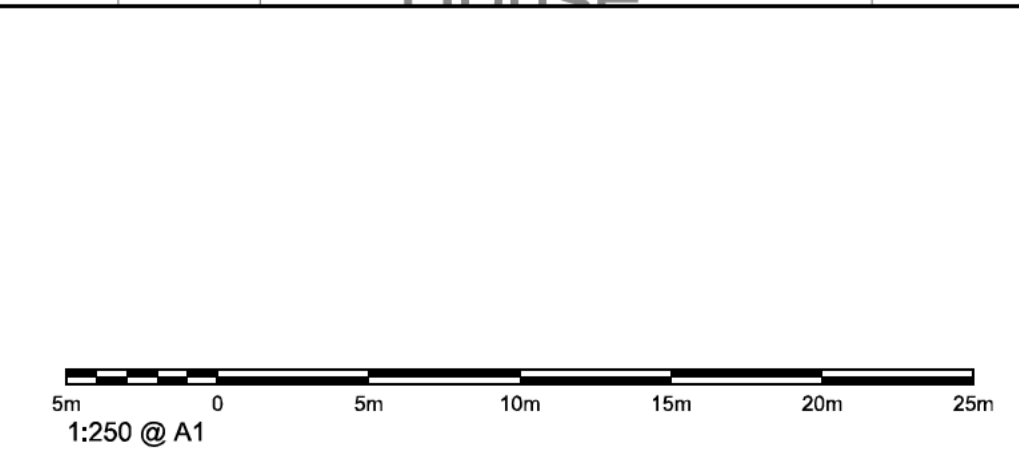
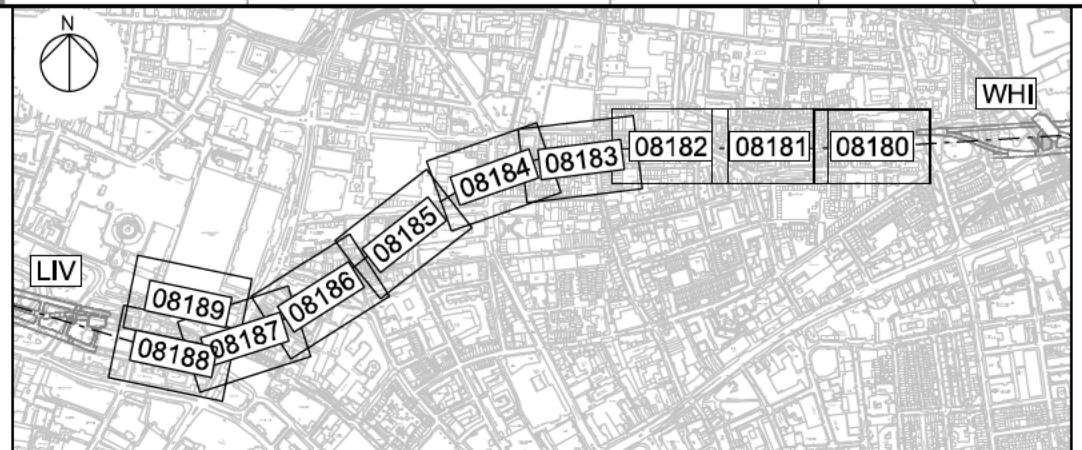
APPENDIX A: INSTRUMENT LOCATION

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- Notes**
- Levelling Points
 - Shallow Datum
 - Sockets
 - 3D Prisms
 - ⊞ Retro Targets
 - ⊙ Inclinator
 - ◇ Rod Extensometer



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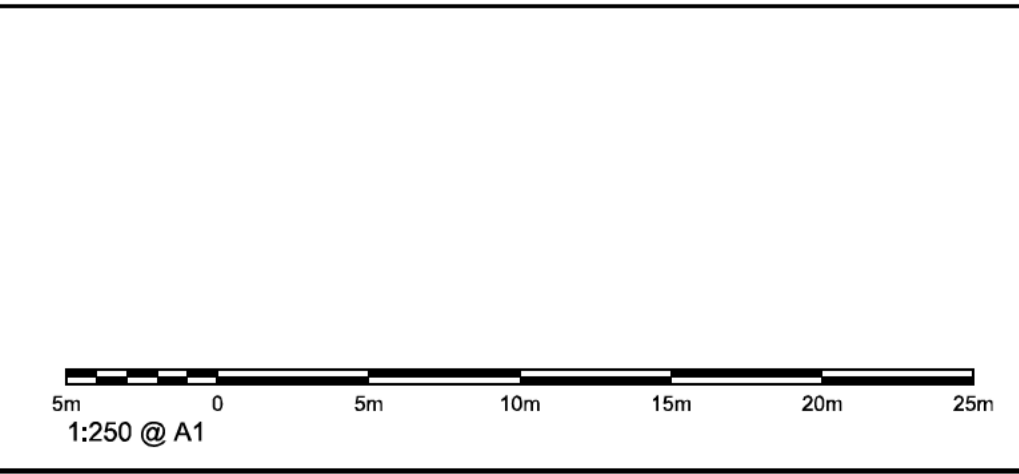
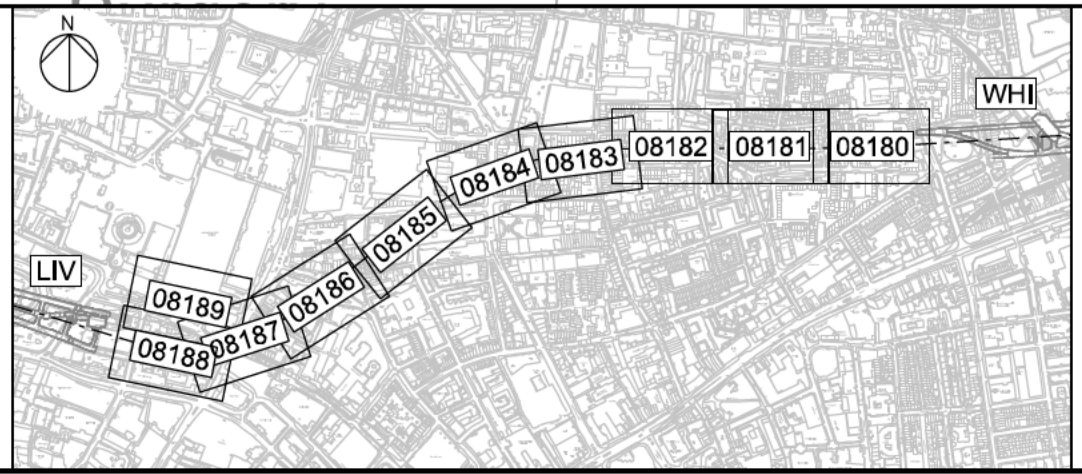
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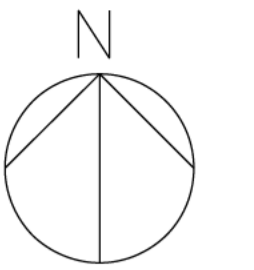
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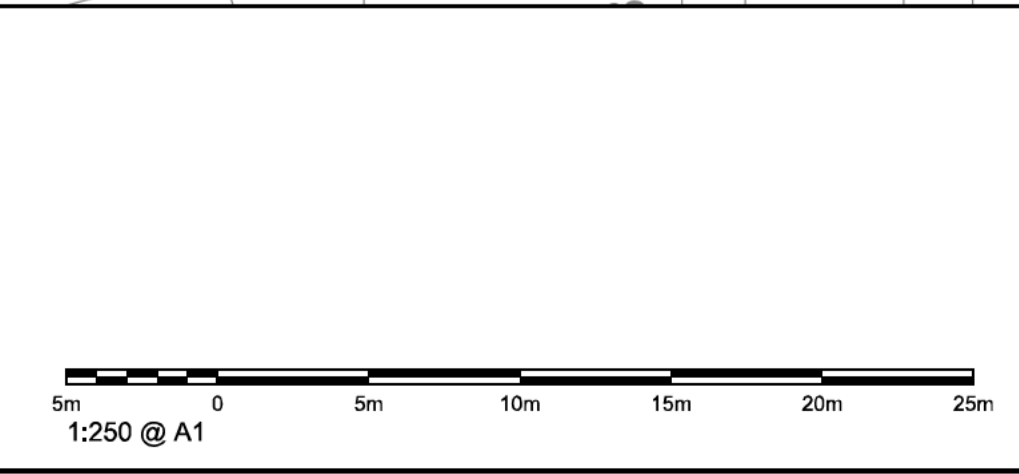
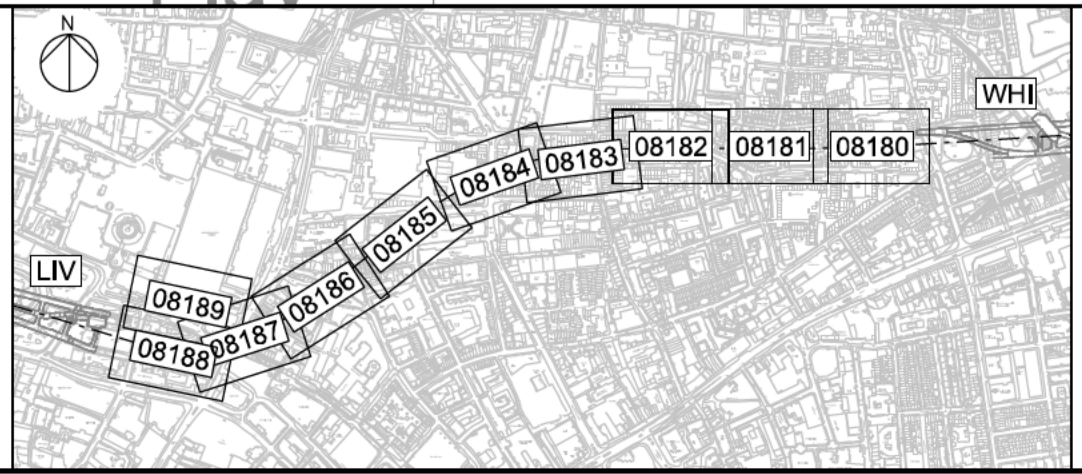
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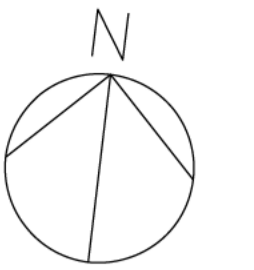
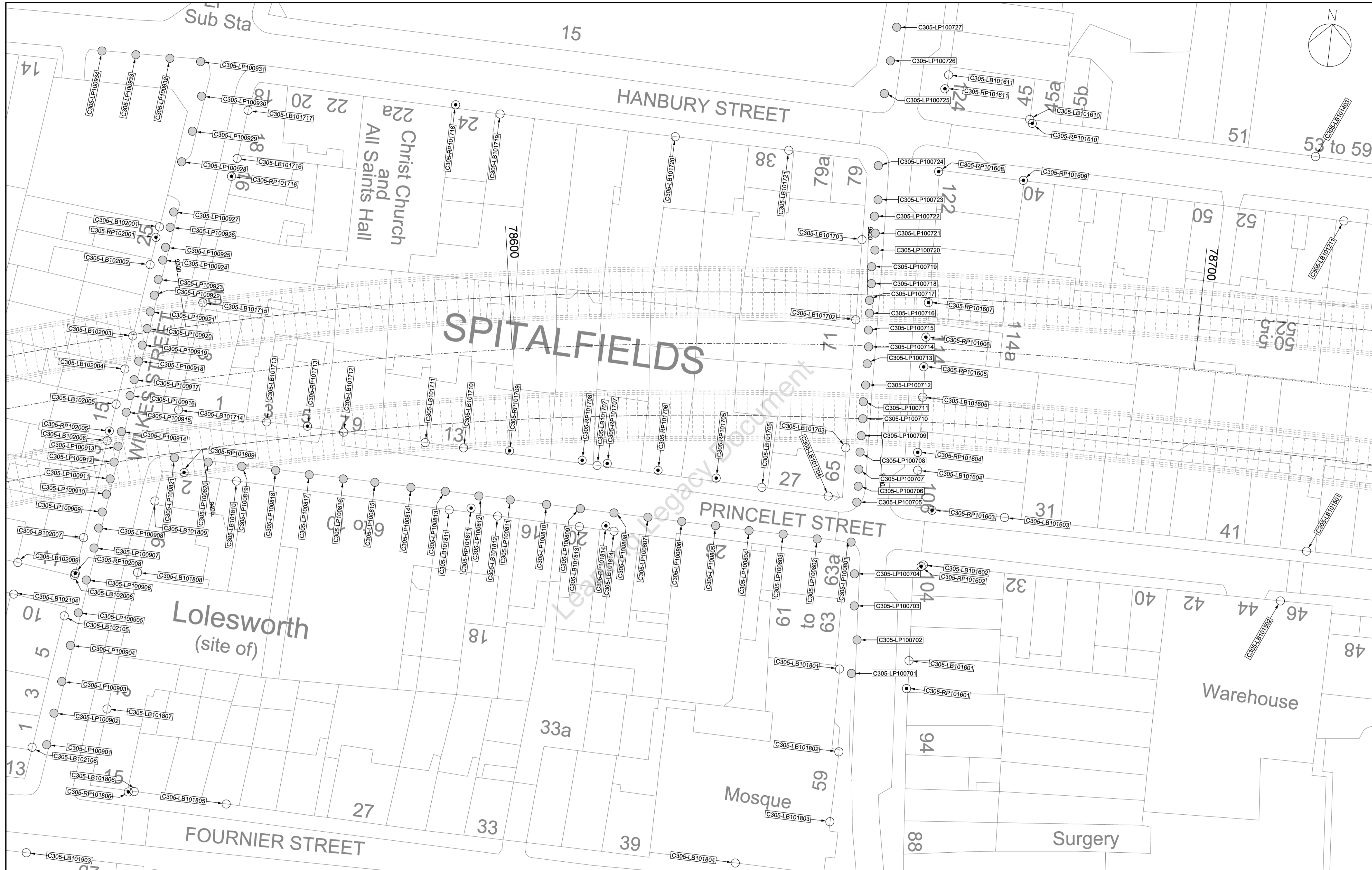
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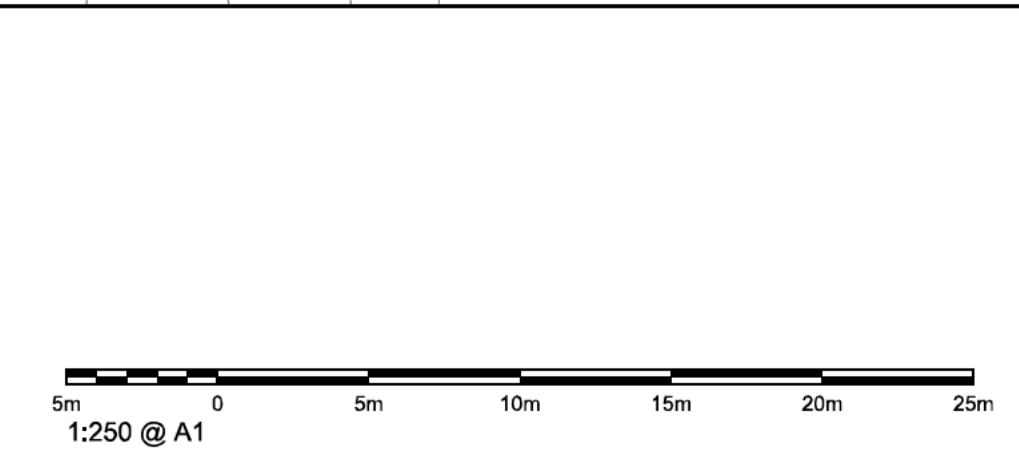
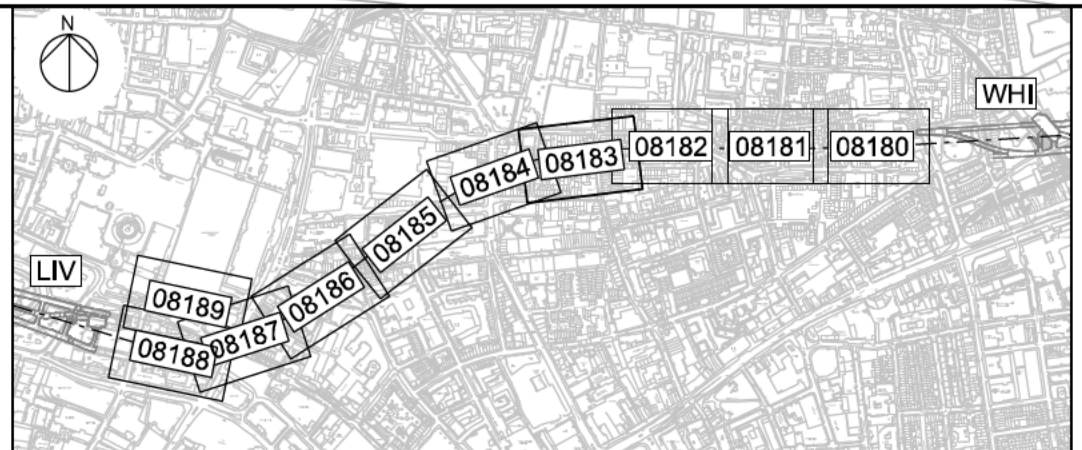
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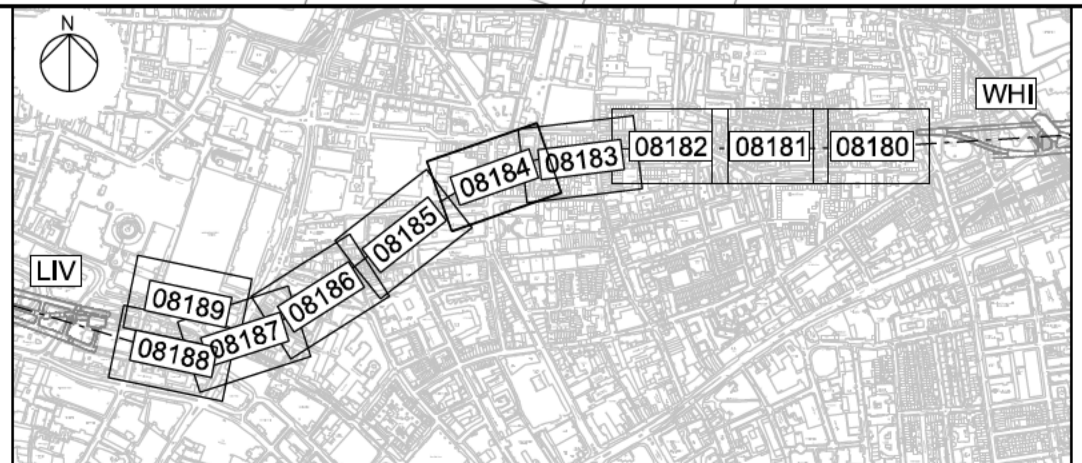
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 - 3D Prisms
 - ⊠ Retro Targets
 - ⊙ Inclinometer
 - ◇ Rod Extensometer
 - ▲ Shallow Datum



Scale: 1:250 @ A1

0 5m 10m 15m 20m 25m

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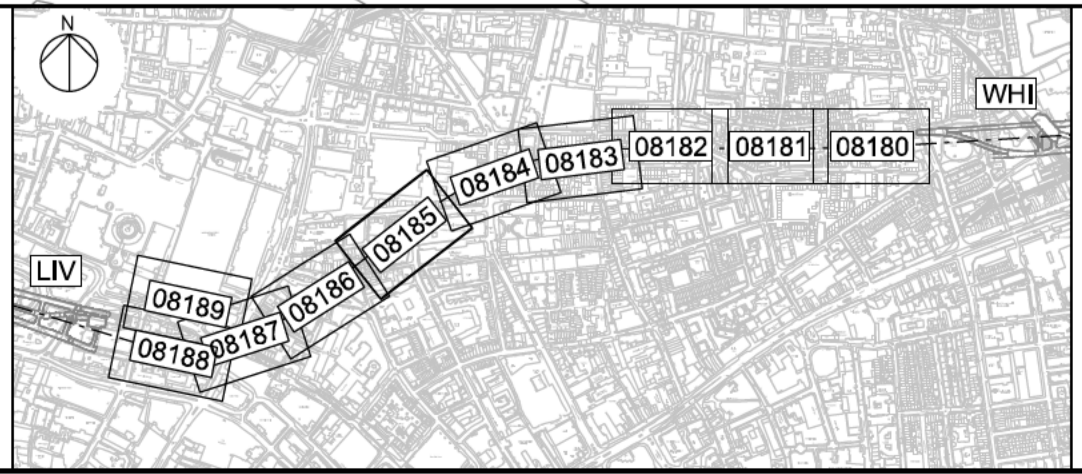
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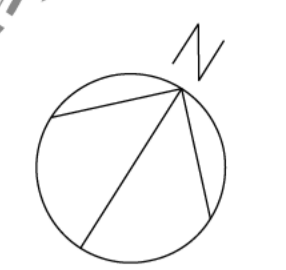
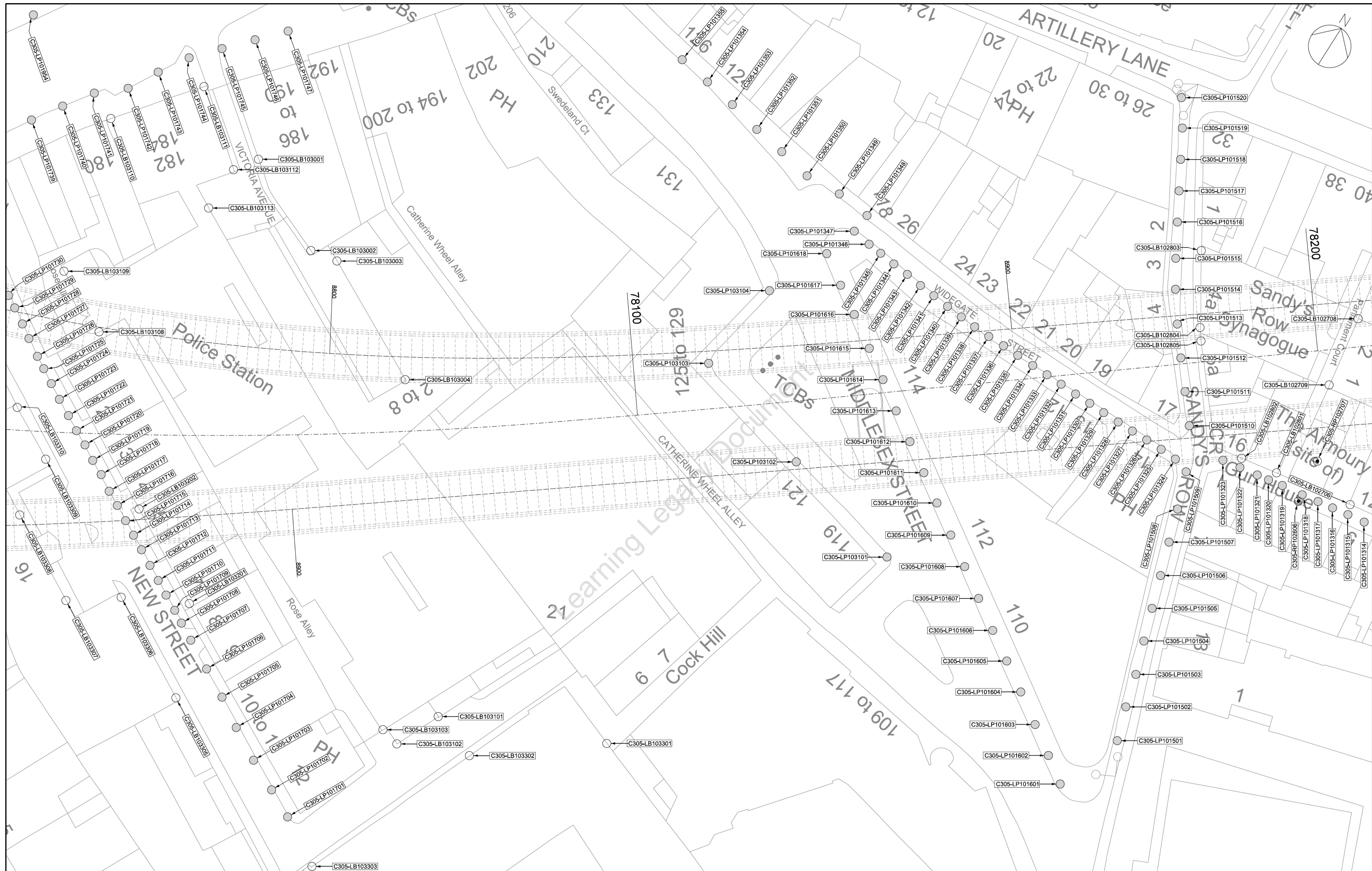


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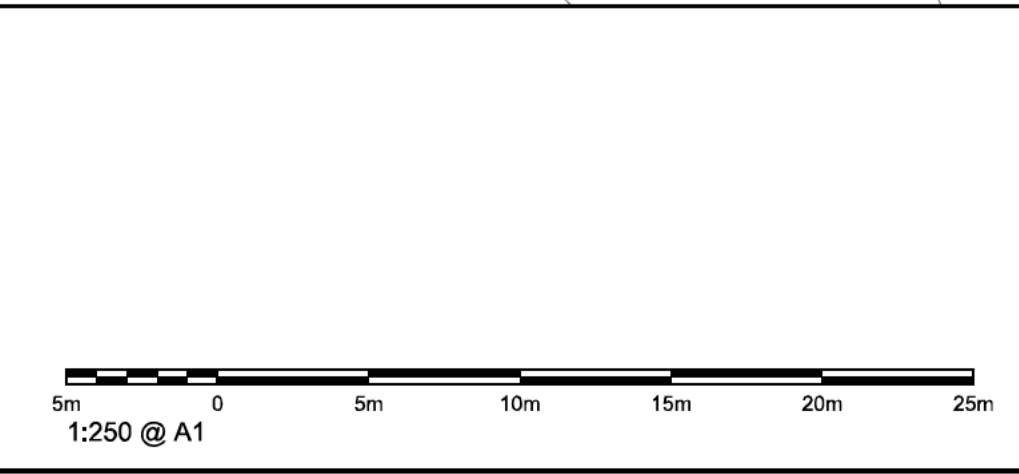
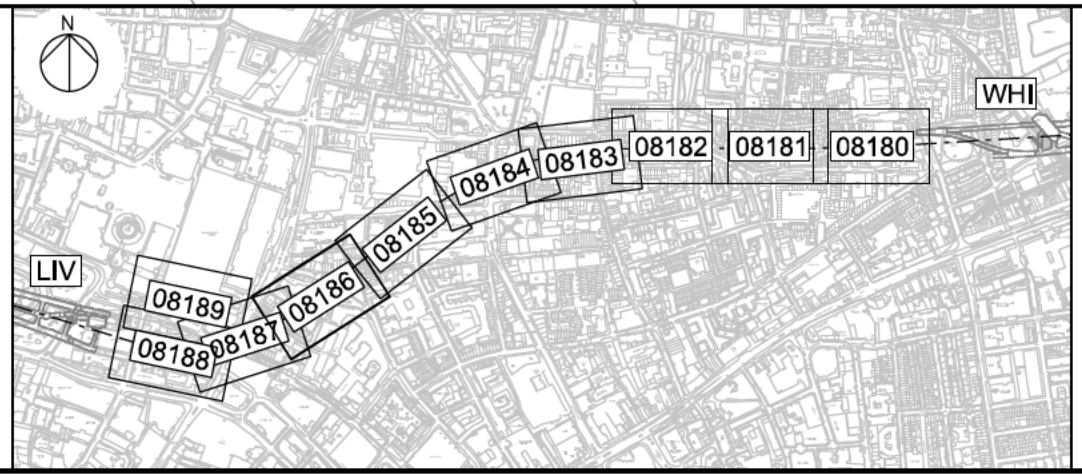
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 - ⊕ Inclinometer
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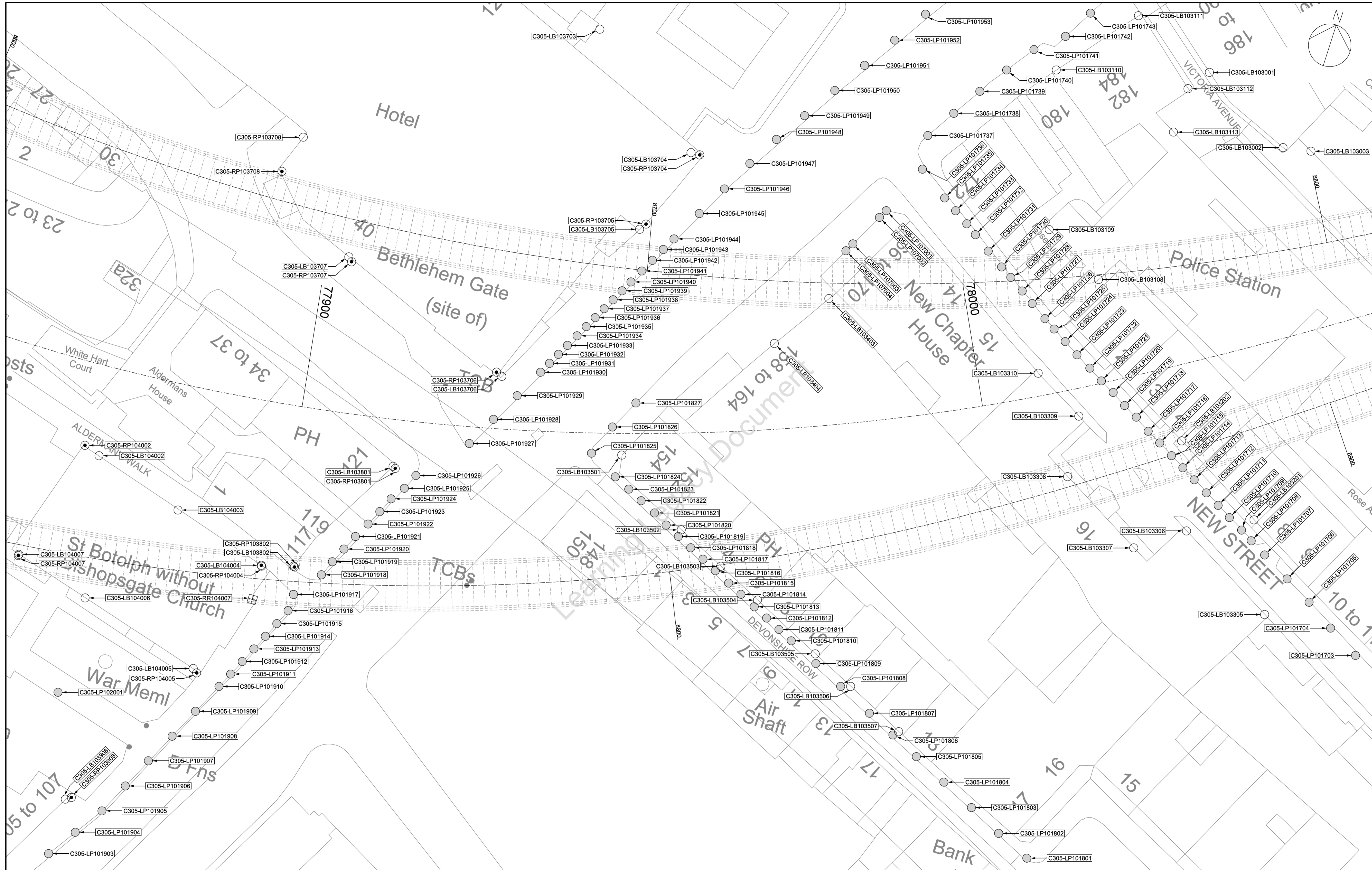
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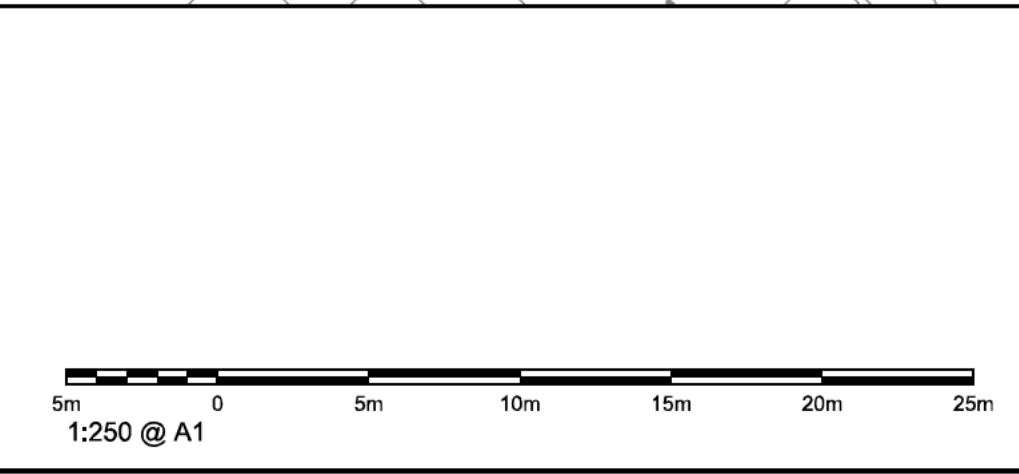
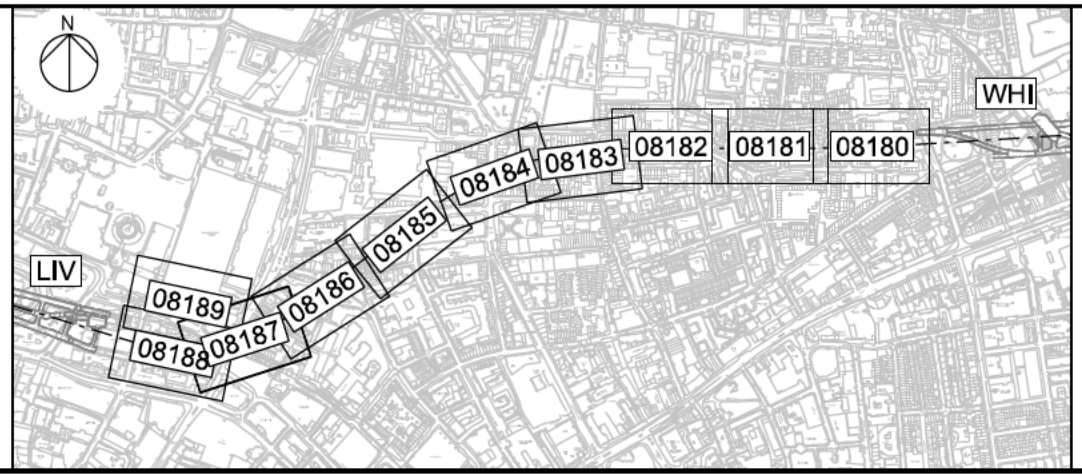
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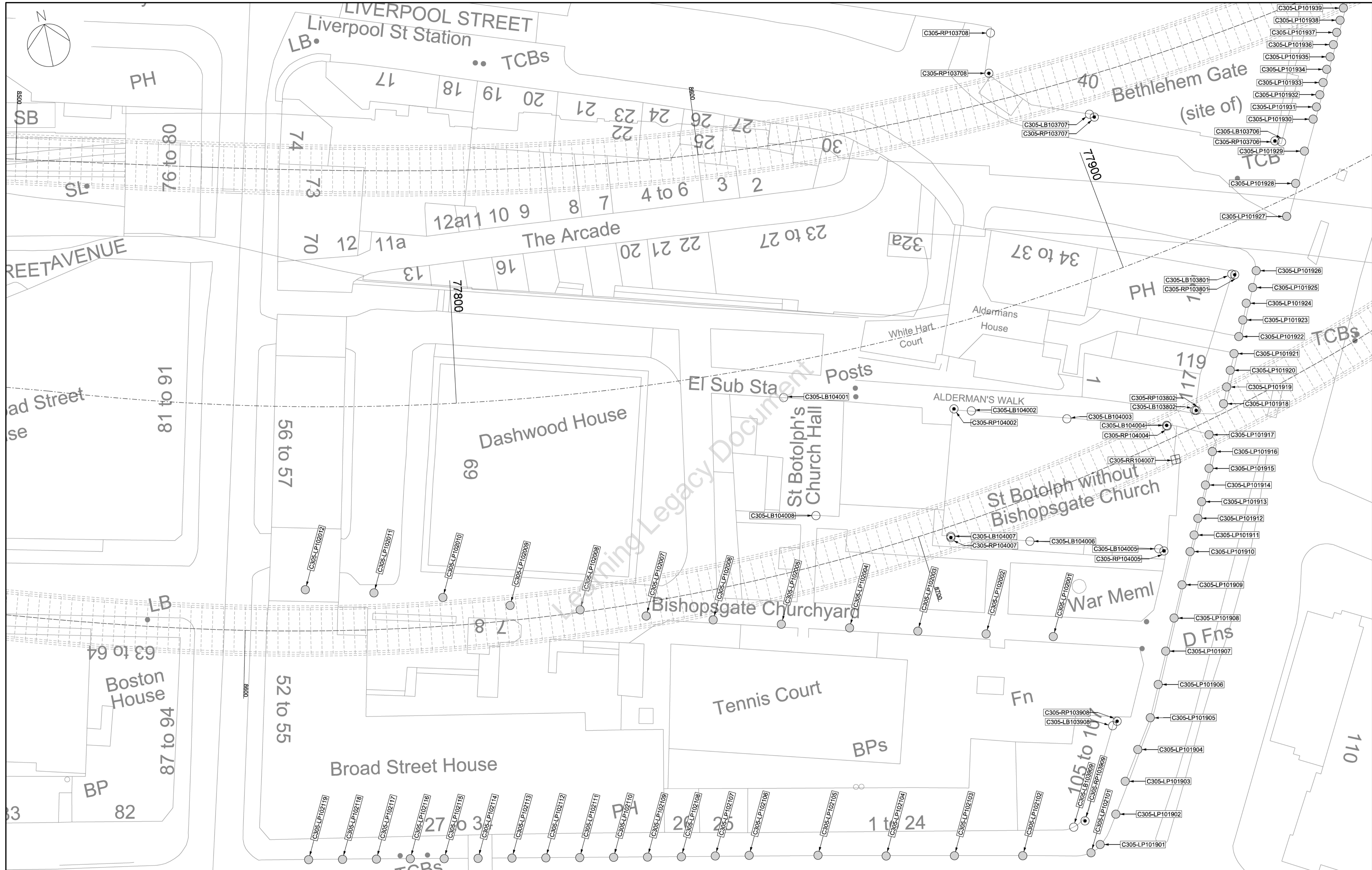



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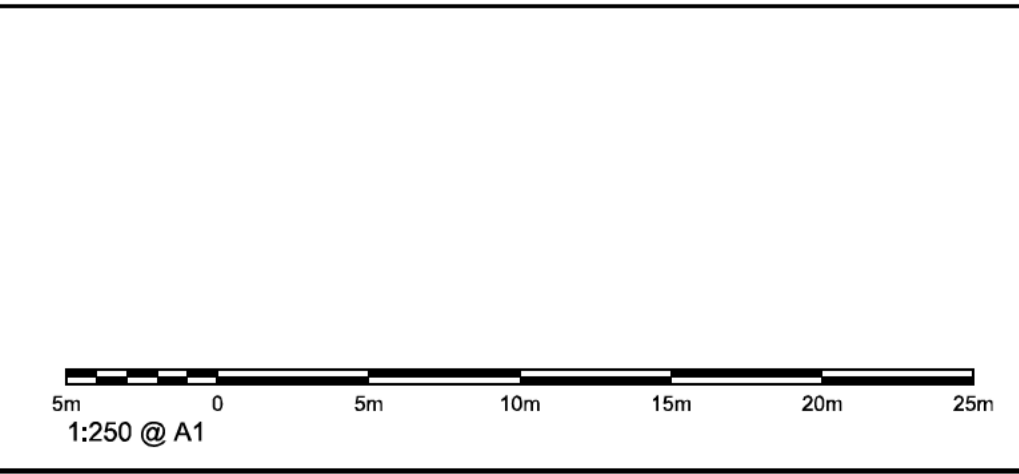
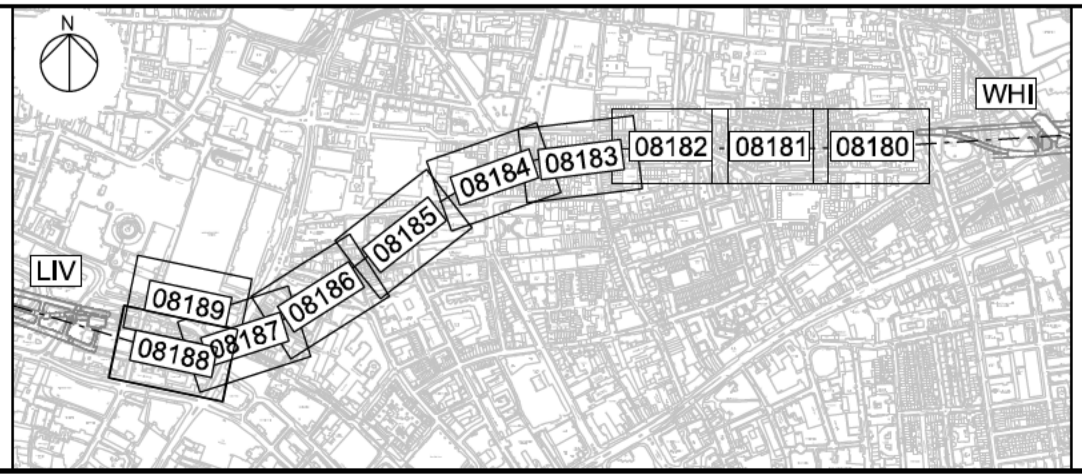
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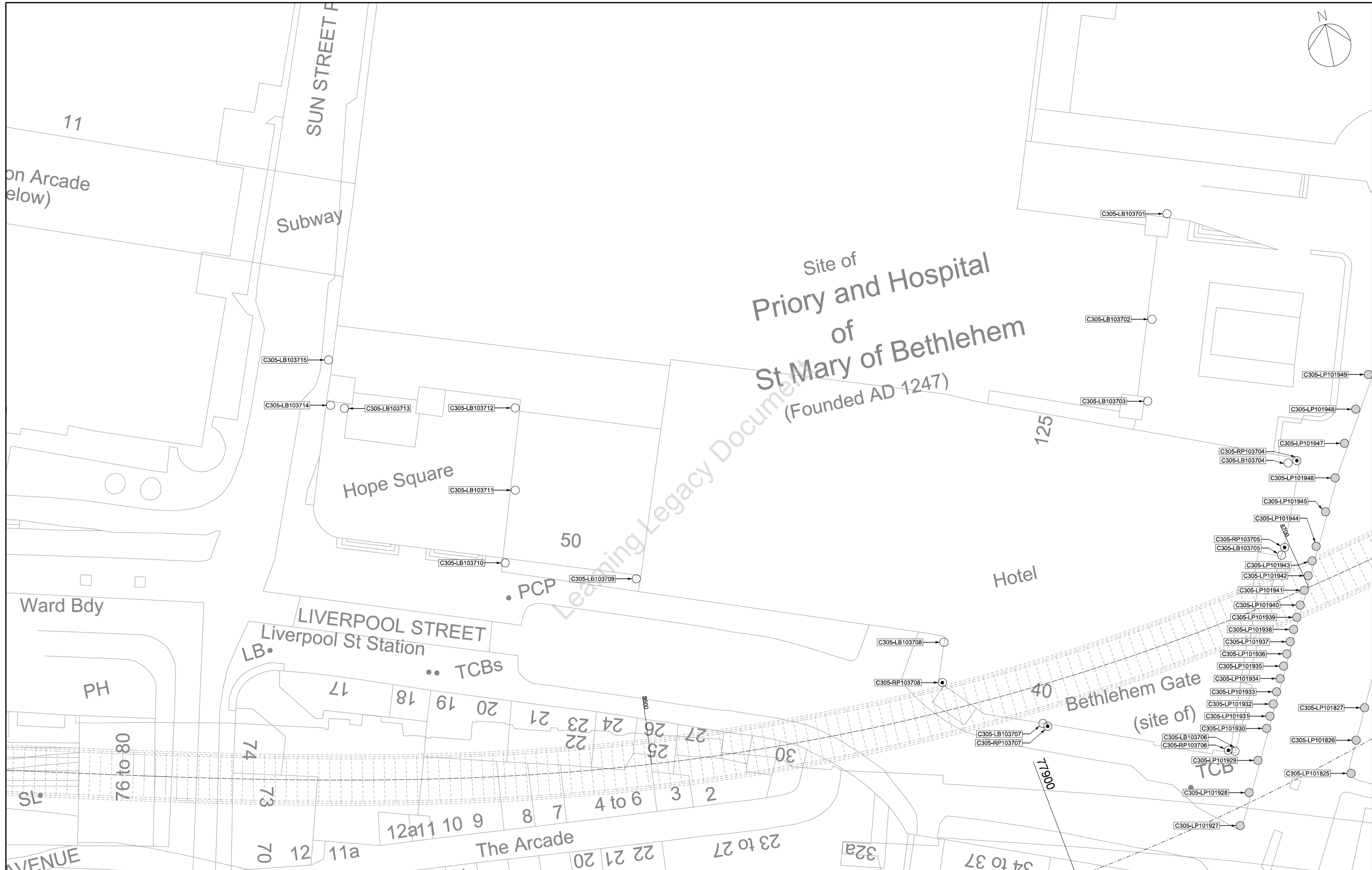
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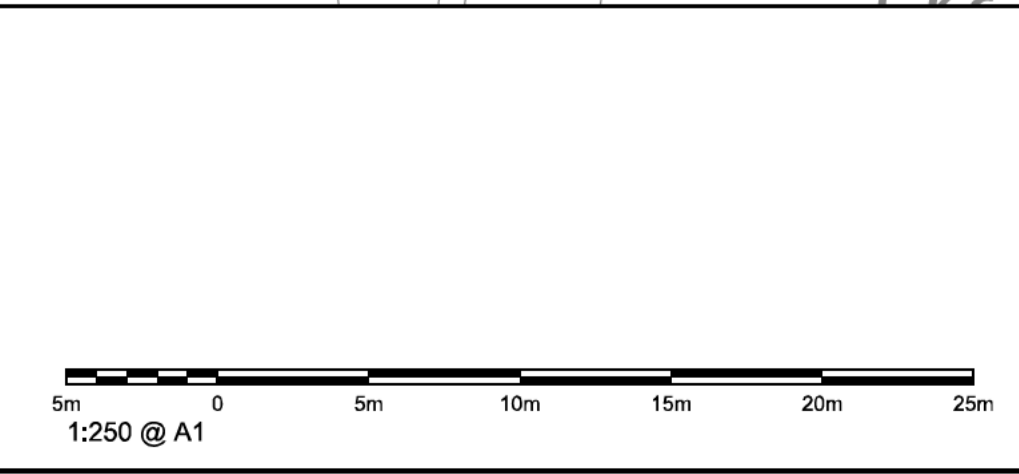
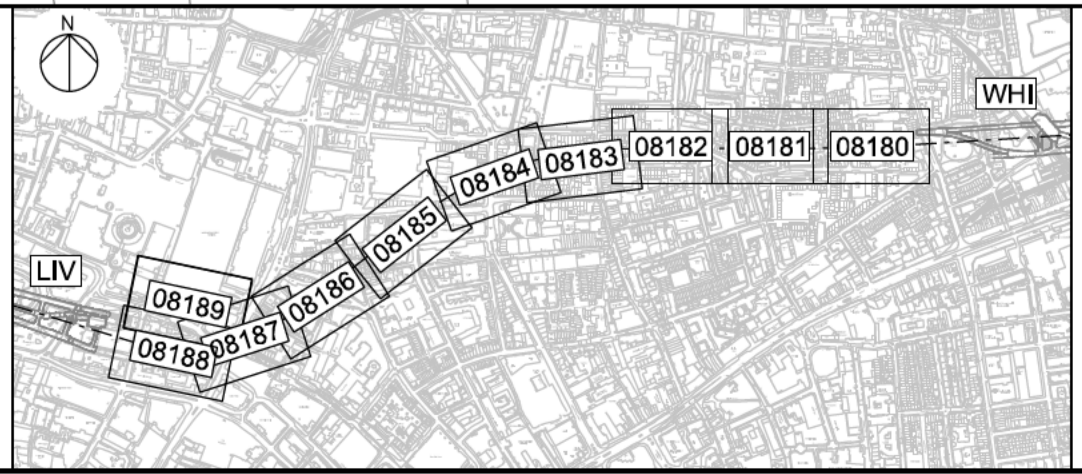
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Drawing and CAD No:
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APPENDIX B: SUMMARY OF INSTRUMENTATION INSTALLED ON SITE

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IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP101101	03-03-14	Installed	84408.133	36516.724	116.913	28-03-14	84408.134	36516.722	116.915
								84408.133	36516.722	116.915
								84408.133	36516.723	116.915
								84408.133	36516.723	116.915
3D Prism	C305-RP101102	03-03-14	Installed	84415.315	36518.937	118.927	28-03-14	84415.316	36518.934	118.929
								84415.316	36518.933	118.928
								84415.316	36518.933	118.928
								84415.316	36518.933	118.928
3D Prism	C305-RP101201	03-03-14	Installed	84373.202	36559.905	116.628	28-03-14	84373.202	36559.905	116.628
								84373.202	36559.905	116.628
								84373.202	36559.905	116.628
								84373.201	36559.905	116.628
3D Prism	C305-RP101202	03-03-14	Installed	84394.494	36549.801	116.745	28-03-14	84394.494	36549.801	116.745
								84394.493	36549.801	116.746
								84394.493	36549.801	116.746
								84394.493	36549.801	116.746
3D Prism	C305-RP101205	04-03-14	Installed	84368.956	36524.631	121.204	28-03-14	84368.956	36524.631	121.204
								84368.956	36524.631	121.204
								84368.956	36524.631	121.204
								84368.955	36524.631	121.204
3D Prism	C305-RP101206	04-03-14	Installed	84349.387	36524.581	119.206	28-03-14	84349.387	36524.581	119.206
								84349.386	36524.581	119.206
								84349.387	36524.581	119.206
								84349.387	36524.581	119.207
3D Prism	C305-RP101208	04-03-14	Installed	84335.512	36524.664	118.364	28-03-14	84335.512	36524.664	118.364
								84335.512	36524.664	118.364
								84335.511	36524.664	118.364
								84335.512	36524.664	118.364

IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP101213	04-03-14	Installed	84319.507	36569.035	119.303	28-03-14	84319.507	36569.035	119.303
								84319.507	36569.036	119.304
								84319.507	36569.035	119.303
								84319.507	36569.036	119.303
3D Prism	C305-RP101215	04-03-14	Installed	84343.385	36568.196	119.394	28-03-14	84343.385	36568.196	119.394
								84343.385	36568.196	119.394
								84343.385	36568.196	119.394
								84343.385	36568.196	119.394
3D Prism	C305-RP101601	06-03-14	Installed	84236.107	36497.469	120.224	04-04-14	84236.107	36497.469	120.224
								84236.107	36497.469	120.224
								84236.107	36497.469	120.224
								84236.107	36497.469	120.224
3D Prism	C305-RP101602	06-03-14	Installed	84236.110	36515.482	119.978	04-04-14	84236.110	36515.482	119.978
								84236.110	36515.482	119.978
								84236.110	36515.482	119.978
								84236.110	36515.482	119.978
3D Prism	C305-RP101603	06-03-14	Installed	84236.707	36523.829	120.149	04-04-14	84236.707	36523.829	120.149
								84236.707	36523.829	120.149
								84236.707	36523.829	120.149
								84236.707	36523.829	120.149
3D Prism	C305-RP101604	06-03-14	Installed	84233.623	36531.987	120.234	04-04-14	84233.623	36531.987	120.234
								84233.622	36531.986	120.234
								84233.622	36531.986	120.234
								84233.622	36531.986	120.234
3D Prism	C305-RP101605	06-03-14	Installed	84233.010	36544.520	120.259	04-04-14	84233.010	36544.520	120.259
								84233.010	36544.520	120.259
								84233.010	36544.520	120.259
								84233.009	36544.520	120.259

IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP101606	07-03-14	Installed	84232.811	36548.867	120.026	04-04-14	84232.811	36548.867	120.026
								84232.811	36548.868	120.026
								84232.811	36548.868	120.026
								84232.811	36548.868	120.026
3D Prism	C305-RP101607	07-03-14	Installed	84232.573	36553.937	120.117	04-04-14	84232.573	36553.937	120.117
								84232.572	36553.938	120.117
								84232.572	36553.938	120.116
								84232.572	36553.937	120.116
3D Prism	C305-RP101608	07-03-14	Installed	84231.788	36573.158	119.412	04-04-14	84231.788	36573.158	119.412
								84231.788	36573.158	119.411
								84231.789	36573.158	119.411
								84231.789	36573.158	119.411
3D Prism	C305-RP101609	07-03-14	Installed	84244.253	36573.357	117.562	04-04-14	84244.253	36573.357	117.562
								84244.253	36573.357	117.562
								84244.254	36573.357	117.562
								84244.254	36573.358	117.562
3D Prism	C305-RP101610	07-03-14	Installed	84244.555	36581.786	119.050	04-04-14	84244.555	36581.786	119.050
								84244.555	36581.785	119.050
								84244.555	36581.785	119.050
								84244.555	36581.785	119.049
3D Prism	C305-RP101611	07-03-14	Installed	84231.254	36585.296	119.512	04-04-14	84231.254	36585.296	119.512
								84231.254	36585.296	119.512
								84231.254	36585.296	119.512
								84231.253	36585.296	119.511
3D Prism	C305-RP101705	11-03-14	Installed	84204.788	36524.742	118.412	04-04-14	84204.788	36524.742	118.412
								84204.788	36524.742	118.412
								84204.788	36524.742	118.412
								84204.787	36524.742	118.412

IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP101706	11-03-14	Installed	84196.195	36524.871	118.445	04-04-14	84196.195	36524.871	118.445
								84196.196	36524.871	118.445
								84196.195	36524.871	118.445
								84196.195	36524.871	118.445
3D Prism	C305-RP101707	11-03-14	Installed	84188.703	36524.971	118.510	04-04-14	84188.703	36524.971	118.510
								84188.703	36524.971	118.510
								84188.703	36524.971	118.510
								84188.704	36524.971	118.510
3D Prism	C305-RP101708	11-03-14	Installed	84184.999	36524.998	118.753	04-04-14	84184.999	36524.998	118.753
								84184.999	36524.998	118.753
								84184.999	36524.998	118.753
								84185.000	36524.999	118.753
3D Prism	C305-RP101709	11-03-14	Installed	84174.284	36525.122	118.805	04-04-14	84174.284	36525.122	118.805
								84174.285	36525.122	118.805
								84174.285	36525.122	118.806
								84174.285	36525.122	118.805
3D Prism	C305-RP101713	11-03-14	Installed	84144.495	36525.184	118.238	04-04-14	84144.495	36525.184	118.238
								84144.495	36525.184	118.238
								84144.495	36525.184	118.238
								84144.494	36525.184	118.238
3D Prism	C305-RP101716	13-03-14	Installed	84129.104	36560.183	118.715	02-04-14	84129.104	36560.183	118.715
								84129.104	36560.183	118.715
								84129.104	36560.183	118.714
								84129.105	36560.184	118.714
3D Prism	C305-RP101718	10-03-14	Installed	84160.432	36574.464	118.386	04-04-14	84160.432	36574.464	118.386
								84160.432	36574.464	118.386
								84160.432	36574.464	118.386
								84160.432	36574.464	118.386

IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP101806	14-03-14	Installed	84124.804	36468.926	119.053	02-04-14	84124.804	36468.926	119.053
								84124.804	36468.926	119.053
								84124.804	36468.926	119.053
								84124.804	36468.926	119.053
3D Prism	C305-RP101809	12-03-14	Installed	84127.365	36516.320	120.021	04-04-14	84127.365	36516.320	120.021
								84127.364	36516.320	120.021
								84127.364	36516.319	120.021
								84127.364	36516.319	120.021
3D Prism	C305-RP101811	12-03-14	Installed	84169.691	36516.126	119.747	04-04-14	84169.691	36516.126	119.747
								84169.690	36516.126	119.747
								84169.691	36516.126	119.747
								84169.691	36516.126	119.748
3D Prism	C305-RP101814	12-03-14	Installed	84189.580	36515.895	120.420	04-04-14	84189.580	36515.895	120.420
								84189.580	36515.895	120.420
								84189.580	36515.895	120.420
								84189.580	36515.895	120.420
3D Prism	C305-RP102001	13-03-14	Installed	84119.189	36549.998	118.721	02-04-14	84119.189	36549.998	118.721
								84119.188	36549.997	118.721
								84119.188	36549.997	118.721
								84119.188	36549.998	118.721
3D Prism	C305-RP102005	13-03-14	Installed	84115.777	36521.053	118.363	02-04-14	84115.777	36521.053	118.363
								84115.777	36521.053	118.362
								84115.777	36521.053	118.363
								84115.777	36521.053	118.363
3D Prism	C305-RP102008	17-03-14	Installed	84113.307	36499.757	121.815	02-04-14	84113.307	36499.757	121.815
								84113.307	36499.756	121.815
								84113.307	36499.756	121.815
								84113.307	36499.757	121.816

IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP102108	18-03-14	Installed	84081.448	36469.041	119.181	02-04-14	84086.962	36469.069	118.836
								84086.962	36469.069	118.836
								84086.962	36469.069	118.836
								84086.962	36469.069	118.836
3D Prism	C305-RP102109	18-03-14	Installed	84086.962	36469.069	118.836	02-04-14	84081.448	36469.041	119.181
								84081.448	36469.041	119.181
								84081.448	36469.042	119.180
								84081.448	36469.041	119.180
3D Prism	C305-RP102110	18-03-14	Installed	84070.142	36469.067	120.489	02-04-14	84070.142	36469.067	120.489
								84070.142	36469.067	120.489
								84070.142	36469.067	120.489
								84070.142	36469.067	120.489
3D Prism	C305-RP102111	18-03-14	Installed	84061.016	36469.133	119.921	14-04-14	84061.016	36469.134	119.917
								84061.016	36469.134	119.917
								84061.016	36469.134	119.917
								84061.015	36469.134	119.917
3D Prism	C305-RP102112	18-03-14	Installed	84056.168	36476.816	119.601	14-04-14	84056.168	36476.816	119.601
								84056.168	36476.816	119.601
								84056.168	36476.816	119.601
								84056.168	36476.816	119.601
3D Prism	C305-RP102201	20-03-14	Installed	84036.939	36547.935	121.355	14-04-14	84036.939	36547.935	121.355
								84036.939	36547.934	121.355
								84036.939	36547.934	121.355
								84036.940	36547.934	121.355
3D Prism	C305-RP102204	20-03-14	Installed	84036.811	36524.716	120.731	14-04-14	84036.811	36524.716	120.731
								84036.811	36524.716	120.731
								84036.811	36524.716	120.732
								84036.811	36524.716	120.731

IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP102207	20-03-14	Installed	84035.326	36500.735	122.104	14-04-14	84035.326	36500.735	122.104
								84035.326	36500.735	122.103
								84035.326	36500.735	122.103
								84035.326	36500.736	122.103
3D Prism	C305-RP102210	20-03-14	Installed	84033.451	36471.873	120.609	14-04-14	84033.451	36471.873	120.609
								84033.451	36471.873	120.609
								84033.451	36471.873	120.609
								84033.451	36471.873	120.610
3D Prism	C305-RP102214	19-03-14	Installed	84018.789	36454.618	120.744	14-04-14	84018.789	36454.618	120.744
								84018.790	36454.618	120.745
								84018.790	36454.618	120.745
								84018.790	36454.618	120.744
3D Prism	C305-RP102216	19-03-14	Installed	83985.307	36451.683	120.947	14-04-14	83985.307	36451.683	120.947
								83985.307	36451.682	120.947
								83985.307	36451.682	120.947
								83985.306	36451.682	120.947
3D Prism	C305-RP102221	19-03-14	Installed	83958.179	36449.258	120.998	14-04-14	83958.179	36449.258	120.998
								83958.179	36449.257	120.998
								83958.179	36449.257	120.998
								83958.179	36449.257	120.998
3D Prism	C305-RP102223	20-03-14	Installed	83945.339	36470.970	120.080	10-04-14	83945.339	36470.970	120.080
								83945.339	36470.970	120.080
								83945.339	36470.970	120.080
								83945.340	36470.971	120.080
3D Prism	C305-RP102224	20-03-14	Installed	83946.532	36486.197	120.145	10-04-14	83946.532	36486.197	120.145
								83946.532	36486.197	120.145
								83946.532	36486.196	120.145
								83946.532	36486.196	120.146

IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP102225	20-03-14	Installed	83947.760	36501.410	120.118	10-04-14	83947.760	36501.410	120.118
								83947.760	36501.410	120.118
								83947.760	36501.410	120.118
								83947.759	36501.410	120.118
3D Prism	C305-RP102406	24-03-14	Installed	83870.383	36431.392	118.263	10-04-14	83870.383	36431.392	118.263
								83870.383	36431.392	118.263
								83870.384	36431.392	118.262
								83870.383	36431.392	118.262
3D Prism	C305-RP102407	24-03-14	Installed	83900.713	36433.594	118.256	10-04-14	83900.713	36433.594	118.256
								83900.713	36433.594	118.255
								83900.713	36433.594	118.256
								83900.713	36433.593	118.256
3D Prism	C305-RP102408	24-03-14	Installed	83914.379	36434.502	118.126	10-04-14	83914.379	36434.502	118.126
								83914.380	36434.502	118.126
								83914.379	36434.502	118.126
								83914.380	36434.502	118.125
3D Prism	C305-RP102601	21-03-14	Installed	83891.807	36344.391	120.252	09-04-14	83891.807	36344.391	120.252
								83891.807	36344.391	120.253
								83891.807	36344.391	120.253
								83891.807	36344.391	120.253
3D Prism	C305-RP102602	21-03-14	Installed	83877.077	36341.224	120.285	09-04-14	83877.077	36341.224	120.285
								83877.076	36341.224	120.286
								83877.076	36341.224	120.286
								83877.077	36341.224	120.285
3D Prism	C305-RP102604	26-03-14	Installed	83855.751	36337.832	119.672	09-04-14	83855.751	36337.832	119.672
								83855.751	36337.832	119.672
								83855.751	36337.832	119.672
								83855.751	36337.832	119.672

IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP102605	26-03-14	Installed	83846.091	36336.414	119.660	09-04-14	83846.091	36336.414	119.660
								83846.091	36336.414	119.660
								83846.091	36336.414	119.660
								83846.091	36336.414	119.661
3D Prism	C305-RP102606	26-03-14	Installed	83833.565	36334.787	119.739	09-04-14	83833.565	36334.787	119.739
								83833.566	36334.787	119.739
								83833.565	36334.787	119.740
								83833.566	36334.787	119.740
3D Prism	C305-RP102707	26-03-14	Installed	83832.769	36341.226	119.755	09-04-14	83832.769	36341.226	119.755
								83832.768	36341.226	119.755
								83832.768	36341.225	119.754
								83832.767	36341.225	119.754
3D Prism	C305-RP103704	23-03-14	Installed	83610.948	36261.105	122.701	11-04-14	83610.948	36261.105	122.701
								83610.948	36261.105	122.701
								83610.948	36261.105	122.701
								83610.948	36261.105	122.701
3D Prism	C305-RP103705	23-03-14	Installed	83606.575	36249.049	123.870	11-04-14	83606.575	36249.049	123.870
								83606.575	36249.049	123.870
								83606.575	36249.049	123.870
								83606.575	36249.048	123.870
3D Prism	C305-RP103706	23-03-14	Installed	83592.405	36221.720	123.831	11-04-14	83592.405	36221.720	123.831
								83592.405	36221.719	123.832
								83592.405	36221.719	123.832
								83592.404	36221.719	123.832
3D Prism	C305-RP103707	23-03-14	Installed	83567.257	36230.586	123.173	11-04-14	83567.257	36230.586	123.173
								83567.257	36230.586	123.173
								83567.257	36230.586	123.173
								83567.257	36230.586	123.173

IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP103708	23-03-14	Installed	83553.487	36240.041	124.111	11-04-14	83553.487	36240.041	124.111
								83553.487	36240.041	124.110
								83553.487	36240.040	124.111
								83553.487	36240.040	124.111
3D Prism	C305-RP103801	23-03-14	Installed	83582.609	36203.763	122.316	11-04-14	83582.609	36203.763	122.316
								83582.609	36203.763	122.316
								83582.608	36203.763	122.316
								83582.609	36203.763	122.316
3D Prism	C305-RP103802	23-03-14	Installed	83573.003	36185.502	121.694	11-04-14	83573.003	36185.502	121.694
								83573.003	36185.501	121.694
								83573.003	36185.501	121.694
								83573.002	36185.501	121.694
3D Prism	C305-RP103908	23-03-14	Installed	83552.278	36143.385	124.390	25-07-14	83552.278	36143.385	124.390
								83552.278	36143.385	124.390
								83552.279	36143.385	124.390
								83552.279	36143.385	124.390
3D Prism	C305-RP103909	23-03-14	Installed	83544.671	36130.084	123.637	25-07-14	83544.671	36130.084	123.637
								83544.671	36130.083	123.636
								83544.671	36130.083	123.637
								83544.671	36130.083	123.637
3D Prism	C305-RP104002	05-07-14	Installed	83538.351	36193.042	121.180	25-07-14	83538.351	36193.042	121.180
								83538.351	36193.042	121.179
								83538.351	36193.042	121.179
								83538.351	36193.042	121.179
3D Prism	C305-RP104004	05-07-14	Installed	83568.308	36184.256	121.172	25-07-14	83568.308	36184.256	121.172
								83568.308	36184.256	121.173
								83568.308	36184.256	121.172
								83568.308	36184.256	121.172

IRS Installation Record Sheets – 3D Prism

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Average	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
3D Prism	C305-RP104005	05-07-14	Installed	83564.127	36166.357	121.065	25-07-14	83564.127	36166.357	121.065
								83564.127	36166.357	121.065
								83564.128	36166.357	121.064
								83564.128	36166.356	121.064
3D Prism	C305-RP104007	05-07-14	Installed	83534.019	36174.701	120.067	25-07-14	83534.019	36174.701	120.067
								83534.020	36174.701	120.067
								83534.020	36174.701	120.067
								83534.020	36174.701	120.066

Note: All elevations or levels presented in this document are metres above tunnel datum (mATD).

Learning Legacy Document

IRS Installation Record Sheets – Sockets

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Socket	C305-LB100101	18-02-14	Installed	84781.235	36518.249	114.145	27-02-14	114.145	114.144	114.144
Socket	C305-LB100102	18-02-14	Installed	84765.092	36509.276	114.153	27-02-14	114.153	114.153	114.152
Socket	C305-LB100103	18-02-14	Installed	84748.964	36517.904	114.363	27-02-14	114.363	114.363	114.362
Socket	C305-LB100201	19-02-14	Installed	84755.692	36569.125	114.597	27-02-14	114.596	114.596	114.596
Socket	C305-LB100202	19-02-14	Installed	84755.411	36559.924	114.384	27-02-14	114.383	114.383	114.384
Socket	C305-LB100203	18-02-14	Installed	84752.627	36542.735	114.330	27-02-14	114.330	114.330	114.330
Socket	C305-LB100204	24-02-14	Installed	84752.123	36533.933	114.331	27-02-14	114.331	114.331	114.330
Socket	C305-LB100205	24-02-14	Installed	84741.508	36534.164	114.425	27-02-14	114.424	114.424	114.424
Socket	C305-LB100301	18-02-14	Installed	84645.239	36519.829	114.461	20-03-14	114.462	114.461	114.462
Socket	C305-LB100302	18-02-14	Installed	84654.322	36519.909	114.467	20-03-14	114.467	114.467	114.467
Socket	C305-LB100303	03-03-14	Installed	84649.405	36536.623	114.221	20-03-14	114.221	114.221	114.222
Socket	C305-LB100304	03-03-14	Installed	84620.791	36533.991	114.155	20-03-14	114.155	114.155	114.155
Socket	C305-LB100305	03-03-14	Installed	84614.541	36549.918	113.924	20-03-14	113.924	113.924	113.924
Socket	C305-LB100306	03-03-14	Installed	84645.104	36556.311	113.929	20-03-14	113.929	113.929	113.929
Socket	C305-LB100401	24-02-14	Installed	84613.138	36603.217	113.324	27-02-14	113.324	113.324	113.323
Socket	C305-LB100402	24-02-14	Installed	84613.782	36595.846	113.400	27-02-14	113.400	113.400	113.400
Socket	C305-LB100403	24-02-14	Installed	84606.081	36595.044	113.414	27-02-14	113.414	113.414	113.414
Socket	C305-LB100404	24-02-14	Installed	84596.722	36594.762	112.790	27-02-14	112.790	112.790	112.790
Socket	C305-LB100405	24-02-14	Installed	84590.583	36593.943	112.709	27-02-14	112.709	112.709	112.708
Socket	C305-LB100406	18-02-14	Installed	84582.139	36593.135	112.923	27-02-14	112.923	112.923	112.923
Socket	C305-LB100407	18-02-14	Installed	84572.592	36592.177	112.947	27-02-14	112.946	112.946	112.947
Socket	C305-LB100408	18-02-14	Installed	84551.511	36590.247	112.937	27-02-14	112.937	112.937	112.936
Socket	C305-LB100409	19-02-14	Installed	84545.282	36595.285	112.827	27-02-14	112.827	112.827	112.827
Socket	C305-LB100410	18-02-14	Installed	84576.287	36602.086	112.565	27-02-14	112.565	112.565	112.565
Socket	C305-LB100411	18-02-14	Installed	84583.805	36602.918	112.461	27-02-14	112.461	112.461	112.461
Socket	C305-LB100412	24-02-14	Installed	84590.669	36603.646	112.443	27-02-14	112.443	112.442	112.442
Socket	C305-LB100501	18-02-14	Installed	84551.125	36522.603	113.864	27-02-14	113.864	113.864	113.864
Socket	C305-LB100502	18-02-14	Installed	84547.767	36547.674	113.616	27-02-14	113.615	113.616	113.616

IRS Installation Record Sheets – Sockets

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Socket	C305-LB100503	18-02-14	Installed	84546.205	36558.512	113.767	27-02-14	113.767	113.766	113.766
Socket	C305-LB100504	18-02-14	Installed	84544.458	36570.638	113.874	27-02-14	113.874	113.874	113.873
Socket	C305-LB100505	18-02-14	Installed	84542.976	36580.928	113.980	27-02-14	113.980	113.980	113.979
Socket	C305-LB100506	18-02-14	Installed	84556.177	36582.752	113.894	27-02-14	113.893	113.893	113.893
Socket	C305-LB100601	25-02-14	Installed	84536.017	36520.609	114.143	27-02-14	114.143	114.143	114.143
Socket	C305-LB100602	25-02-14	Installed	84530.676	36519.657	114.076	27-02-14	114.076	114.075	114.075
Socket	C305-LB100603	25-02-14	Installed	84507.957	36516.824	114.000	27-02-14	114.000	114.000	114.000
Socket	C305-LB100604	25-02-14	Installed	84506.885	36520.412	114.074	27-02-14	114.074	114.074	114.074
Socket	C305-LB100605	25-02-14	Installed	84506.769	36525.385	114.288	27-02-14	114.287	114.288	114.287
Socket	C305-LB100606	25-02-14	Installed	84524.798	36540.376	114.241	27-02-14	114.240	114.240	114.240
Socket	C305-LB100607	25-02-14	Installed	84532.928	36541.446	114.209	27-02-14	114.208	114.208	114.208
Socket	C305-LB100702	19-02-14	Installed	84496.334	36514.876	114.111	27-02-14	114.111	114.111	114.111
Socket	C305-LB100703	19-02-14	Installed	84487.892	36519.007	114.153	27-02-14	114.153	114.153	114.153
Socket	C305-LB100704	19-02-14	Installed	84477.237	36524.211	114.113	27-02-14	114.113	114.113	114.112
Socket	C305-LB100705	19-02-14	Installed	84468.708	36528.374	114.124	27-02-14	114.123	114.123	114.124
Socket	C305-LB100712	19-02-14	Installed	84513.285	36564.669	114.173	27-02-14	114.173	114.173	114.173
Socket	C305-LB100801	19-02-14	Installed	84515.714	36573.134	114.034	27-02-14	114.034	114.034	114.034
Socket	C305-LB100802	19-02-14	Installed	84495.713	36575.203	113.974	27-02-14	113.974	113.974	113.974
Socket	C305-LB100803	19-02-14	Installed	84476.801	36577.227	113.980	27-02-14	113.980	113.980	113.980
Socket	C305-LB100901	19-02-14	Installed	84461.222	36535.822	114.148	27-02-14	114.148	114.148	114.147
Socket	C305-LB100902	19-02-14	Installed	84462.827	36548.993	114.050	27-02-14	114.049	114.050	114.049
Socket	C305-LB100903	19-02-14	Installed	84464.650	36563.962	114.036	27-02-14	114.036	114.036	114.036
Socket	C305-LB100904	19-02-14	Installed	84465.817	36573.537	113.947	27-02-14	113.946	113.946	113.946
Socket	C305-LB100905	19-02-14	Installed	84465.559	36585.133	113.879	27-02-14	113.878	113.878	113.878
Socket	C305-LB100906	19-02-14	Installed	84475.696	36584.571	113.953	27-02-14	113.952	113.952	113.952
Socket	C305-LB101001	19-02-14	Installed	84416.410	36552.856	114.042	27-02-14	114.042	114.041	114.042
Socket	C305-LB101002	24-02-04	Installed	84426.012	36548.117	114.036	27-02-14	114.035	114.035	114.035
Socket	C305-LB101003	24-02-04	Installed	84431.968	36545.125	113.991	27-02-14	113.990	113.990	113.990

IRS Installation Record Sheets – Sockets

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Socket	C305-LB101004	24-02-04	Installed	84444.252	36546.001	113.854	27-02-14	113.854	113.853	113.853
Socket	C305-LB101005	19-02-14	Installed	84439.840	36568.042	114.068	27-02-14	114.068	114.067	114.068
Socket	C305-LB101006	19-02-14	Installed	84443.454	36572.359	113.998	27-02-14	113.997	113.997	113.997
Socket	C305-LB101007	19-02-14	Installed	84442.070	36591.841	113.859	27-02-14	113.858	113.858	113.859
Socket	C305-LB101101	03-03-14	Installed	84408.733	36517.004	114.123	06-03-14	114.122	114.123	114.123
Socket	C305-LB101102	03-03-14	Installed	84415.604	36518.628	114.131	06-03-14	114.130	114.131	114.131
Socket	C305-LB101201	03-03-14	Installed	84378.777	36556.954	113.635	06-03-14	113.635	113.635	113.634
Socket	C305-LB101202	03-03-14	Installed	84396.766	36548.454	113.822	06-03-14	113.822	113.821	113.822
Socket	C305-LB101203	03-03-14	Installed	84400.091	36535.508	114.014	06-03-14	114.014	114.014	114.014
Socket	C305-LB101204	03-03-14	Installed	84393.848	36525.516	113.835	06-03-14	113.835	113.835	113.835
Socket	C305-LB101205	04-03-14	Installed	84365.137	36524.622	113.703	06-03-14	113.703	113.702	113.703
Socket	C305-LB101206	04-03-14	Installed	84347.124	36524.645	113.844	06-03-14	113.843	113.844	113.843
Socket	C305-LB101207	04-03-14	Installed	84341.777	36525.156	113.891	06-03-14	113.891	113.891	113.891
Socket	C305-LB101208	04-03-14	Installed	84328.886	36525.035	114.019	06-03-14	114.019	114.020	114.019
Socket	C305-LB101209	04-03-14	Installed	84317.090	36524.999	114.164	06-03-14	114.164	114.163	114.163
Socket	C305-LB101210	05-03-14	Installed	84308.227	36524.386	114.260	06-03-14	114.260	114.260	114.260
Socket	C305-LB101211	05-03-14	Installed	84291.529	36573.034	114.154	06-03-14	114.154	114.154	114.154
Socket	C305-LB101212	05-03-14	Installed	84312.543	36572.873	113.864	06-03-14	113.864	113.864	113.864
Socket	C305-LB101214	04-03-14	Installed	84339.672	36568.795	113.535	06-03-14	113.534	113.534	113.535
Socket	C305-LB101215	04-03-14	Installed	84347.301	36566.500	113.439	06-03-14	113.439	113.439	113.439
Socket	C305-LB101301	03-03-14	Installed	84388.621	36516.721	113.757	06-03-14	113.756	113.757	113.757
Socket	C305-LB101302	05-03-14	Installed	84367.771	36515.056	113.683	06-03-14	113.683	113.683	113.683
Socket	C305-LB101303	05-03-14	Installed	84345.282	36513.368	114.190	06-03-14	114.190	114.190	114.190
Socket	C305-LB101304	05-03-14	Installed	84327.780	36513.258	114.261	06-03-14	114.261	114.261	114.261
Socket	C305-LB101305	05-03-14	Installed	84310.934	36513.160	114.254	06-03-14	114.254	114.254	114.254
Socket	C305-LB101401	05-03-14	Installed	84344.160	36581.230	113.473	21-03-14	113.473	113.472	113.473
Socket	C305-LB101402	05-03-14	Installed	84316.345	36581.623	113.714	21-03-14	113.714	113.714	113.714
Socket	C305-LB101403	05-03-14	Installed	84286.302	36581.883	114.231	21-03-14	114.231	114.232	114.231

IRS Installation Record Sheets – Sockets

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Socket	C305-LB101501	05-03-14	Installed	84291.845	36524.390	114.416	06-03-14	114.416	114.416	114.417
Socket	C305-LB101502	05-03-14	Installed	84288.917	36516.704	114.447	06-03-14	114.447	114.448	114.447
Socket	C305-LB101601	06-03-14	Installed	84235.978	36501.571	115.435	21-03-14	115.434	115.435	115.435
Socket	C305-LB101602	06-03-14	Installed	84236.401	36515.729	115.291	21-03-14	115.291	115.291	115.290
Socket	C305-LB101603	06-03-14	Installed	84247.368	36524.029	115.176	21-03-14	115.175	115.176	115.176
Socket	C305-LB101604	06-03-14	Installed	84233.927	36529.386	115.374	21-03-14	115.374	115.374	115.374
Socket	C305-LB101605	06-03-14	Installed	84233.396	36540.105	115.233	21-03-14	115.233	115.233	115.233
Socket	C305-LB101610	07-03-14	Installed	84244.114	36582.307	114.741	21-03-14	114.741	114.742	114.742
Socket	C305-LB101611	07-03-14	Installed	84231.547	36587.370	114.948	21-03-14	114.948	114.948	114.948
Socket	C305-LB101701	10-03-14	Installed	84221.828	36561.923	115.550	01-04-14	115.550	115.550	115.550
Socket	C305-LB101702	10-03-14	Installed	84222.308	36550.168	115.416	01-04-14	115.416	115.415	115.416
Socket	C305-LB101703	10-03-14	Installed	84223.087	36531.398	115.439	01-04-14	115.439	115.439	115.440
Socket	C305-LB101704	10-03-14	Installed	84221.379	36524.072	115.295	01-04-14	115.295	115.294	115.294
Socket	C305-LB101705	11-03-14	Installed	84211.579	36524.184	114.647	01-04-14	114.646	114.646	114.646
Socket	C305-LB101707	11-03-14	Installed	84187.257	36524.513	115.227	01-04-14	115.227	115.227	115.227
Socket	C305-LB101710	11-03-14	Installed	84167.547	36524.749	114.712	01-04-14	114.711	114.711	114.711
Socket	C305-LB101711	11-03-14	Installed	84161.877	36524.843	114.717	01-04-14	114.716	114.715	114.716
Socket	C305-LB101712	11-03-14	Installed	84149.842	36524.953	114.839	01-04-14	114.838	114.838	114.838
Socket	C305-LB101713	11-03-14	Installed	84138.480	36525.091	115.078	01-04-14	115.077	115.078	115.078
Socket	C305-LB101714	11-03-14	Installed	84125.479	36525.315	115.871	01-04-14	115.871	115.871	115.870
Socket	C305-LB101715	13-03-14	Installed	84127.138	36541.305	114.846	01-04-14	114.847	114.847	114.846
Socket	C305-LB101716	13-03-14	Installed	84129.614	36562.869	114.741	01-04-14	114.740	114.741	114.740
Socket	C305-LB101717	13-03-14	Installed	84130.368	36570.051	114.918	01-04-14	114.917	114.917	114.917
Socket	C305-LB101719	10-03-14	Installed	84167.060	36573.898	114.835	01-04-14	114.836	114.836	114.836
Socket	C305-LB101720	10-03-14	Installed	84192.907	36573.651	114.741	01-04-14	114.741	114.742	114.741
Socket	C305-LB101721	10-03-14	Installed	84209.646	36573.649	114.535	01-04-14	114.536	114.536	114.536
Socket	C305-LB101801	10-03-14	Installed	84226.030	36499.149	114.778	21-03-14	114.779	114.778	114.778
Socket	C305-LB101802	10-03-14	Installed	84227.364	36487.101	114.937	21-03-14	114.936	114.937	114.937

IRS Installation Record Sheets – Sockets

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Socket	C305-LB101803	10-03-14	Installed	84227.277	36476.790	115.307	21-03-14	115.307	115.307	115.306
Socket	C305-LB101804	10-03-14	Installed	84214.253	36469.148	115.310	21-03-14	115.310	115.310	115.310
Socket	C305-LB101805	14-03-14	Installed	84139.251	36468.872	115.656	21-03-14	115.656	115.656	115.656
Socket	C305-LB101806	14-03-14	Installed	84125.663	36469.090	116.003	21-03-14	116.003	116.003	116.003
Socket	C305-LB101807	14-03-14	Installed	84120.280	36480.620	115.976	21-03-14	115.976	115.976	115.976
Socket	C305-LB101808	14-03-14	Installed	84122.341	36500.988	115.002	21-03-14	115.002	115.001	115.002
Socket	C305-LB101809	12-03-14	Installed	84123.624	36511.655	115.147	21-03-14	115.147	115.147	115.147
Socket	C305-LB101810	12-03-14	Installed	84135.141	36515.990	114.860	21-03-14	114.859	114.860	114.860
Socket	C305-LB101811	12-03-14	Installed	84166.535	36515.502	114.739	21-03-14	114.739	114.740	114.739
Socket	C305-LB101812	12-03-14	Installed	84173.680	36515.442	114.644	21-03-14	114.645	114.644	114.645
Socket	C305-LB101813	12-03-14	Installed	84185.749	36515.312	115.211	21-03-14	115.211	115.211	115.211
Socket	C305-LB101814	12-03-14	Installed	84190.844	36515.250	114.794	21-03-14	114.794	114.794	114.794
Socket	C305-LB101901	04-04-14	Installed	84085.637	36458.234	115.478	01-05-14	115.478	115.478	115.478
Socket	C305-LB101902	04-04-14	Installed	84098.577	36458.275	115.504	01-05-14	115.504	115.504	115.504
Socket	C305-LB101903	04-04-14	Installed	84111.037	36458.316	115.817	01-05-14	115.817	115.817	115.818
Socket	C305-LB102001	13-03-14	Installed	84119.514	36551.594	115.323	01-05-14	115.322	115.323	115.322
Socket	C305-LB102002	13-03-14	Installed	84118.809	36545.926	115.429	01-05-14	115.429	115.429	115.429
Socket	C305-LB102003	13-03-14	Installed	84117.538	36535.288	115.385	01-05-14	115.384	115.385	115.385
Socket	C305-LB102004	13-03-14	Installed	84116.946	36530.325	115.315	01-05-14	115.316	115.316	115.316
Socket	C305-LB102005	13-03-14	Installed	84116.296	36525.054	115.598	01-05-14	115.598	115.598	115.599
Socket	C305-LB102006	14-03-14	Installed	84115.630	36519.595	115.673	01-05-14	115.673	115.673	115.674
Socket	C305-LB102007	14-03-14	Installed	84113.884	36505.107	115.131	01-05-14	115.130	115.130	115.130
Socket	C305-LB102008	17-03-14	Installed	84113.226	36499.460	115.113	01-05-14	115.113	115.113	115.113
Socket	C305-LB102009	17-03-14	Installed	84104.768	36500.349	114.898	01-05-14	114.897	114.897	114.897
Socket	C305-LB102010	17-03-14	Installed	84096.064	36501.171	115.024	01-05-14	115.025	115.024	115.025
Socket	C305-LB102101	17-03-14	Installed	84072.185	36498.827	114.610	01-05-14	114.611	114.611	114.610
Socket	C305-LB102102	17-03-14	Installed	84089.808	36497.204	114.856	01-05-14	114.855	114.855	114.856
Socket	C305-LB102103	17-03-14	Installed	84095.822	36496.663	115.000	01-05-14	114.999	114.999	114.999

IRS Installation Record Sheets – Sockets

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Socket	C305-LB102104	17-03-14	Installed	84104.697	36495.677	115.057	01-05-14	115.057	115.057	115.058
Socket	C305-LB102105	14-03-14	Installed	84112.428	36493.400	115.211	01-05-14	115.210	115.211	115.210
Socket	C305-LB102106	14-03-14	Installed	84110.050	36473.743	115.204	01-05-14	115.203	115.203	115.203
Socket	C305-LB102107	18-03-14	Installed	84102.774	36468.974	115.489	01-05-14	115.488	115.489	115.489
Socket	C305-LB102108	18-03-14	Installed	84092.424	36468.866	115.981	01-05-14	115.981	115.980	115.981
Socket	C305-LB102110	18-03-14	Installed	84066.824	36469.048	115.843	01-05-14	115.845	115.845	115.845
Socket	C305-LB102201	20-03-14	Installed	84037.084	36547.301	114.626	01-04-14	114.627	114.627	114.627
Socket	C305-LB102202	20-03-14	Installed	84037.125	36531.862	114.515	01-04-14	114.515	114.515	114.515
Socket	C305-LB102203	20-03-14	Installed	84030.729	36531.779	114.485	01-04-14	114.485	114.485	114.485
Socket	C305-LB102204	20-03-14	Installed	84029.863	36525.020	114.466	01-04-14	114.466	114.466	114.466
Socket	C305-LB102205	20-03-14	Installed	84036.607	36514.138	114.516	01-04-14	114.517	114.517	114.517
Socket	C305-LB102206	20-03-14	Installed	84029.617	36508.685	114.511	01-04-14	114.510	114.511	114.511
Socket	C305-LB102207	20-03-14	Installed	84035.617	36498.512	114.467	01-04-14	114.468	114.468	114.468
Socket	C305-LB102208	20-03-14	Installed	84034.909	36487.985	114.440	01-04-14	114.440	114.440	114.440
Socket	C305-LB102209	20-03-14	Installed	84034.238	36479.080	114.385	01-04-14	114.385	114.385	114.384
Socket	C305-LB102210	20-03-14	Installed	84033.624	36467.859	114.332	01-04-14	114.333	114.333	114.333
Socket	C305-LB102211	20-03-14	Installed	84032.848	36456.074	114.408	01-04-14	114.408	114.408	114.408
Socket	C305-LB102212	19-03-14	Installed	84025.654	36454.977	114.243	01-04-14	114.244	114.243	114.244
Socket	C305-LB102213	19-03-14	Installed	84020.499	36454.522	114.323	01-04-14	114.323	114.323	114.324
Socket	C305-LB102214	19-03-14	Installed	84011.039	36453.711	114.389	01-04-14	114.389	114.389	114.389
Socket	C305-LB102215	19-03-14	Installed	83999.299	36452.796	114.420	01-04-14	114.421	114.420	114.420
Socket	C305-LB102216	19-03-14	Installed	83986.411	36451.861	114.396	01-04-14	114.396	114.396	114.396
Socket	C305-LB102217	19-03-14	Installed	83986.090	36458.278	114.690	01-04-14	114.690	114.690	114.690
Socket	C305-LB102218	19-03-14	Installed	83986.858	36467.448	114.816	01-04-14	114.817	114.816	114.817
Socket	C305-LB102219	19-03-14	Installed	83976.483	36450.736	114.349	01-04-14	114.350	114.349	114.349
Socket	C305-LB102220	19-03-14	Installed	83966.729	36449.990	114.428	01-04-14	114.428	114.429	114.429
Socket	C305-LB102221	19-03-14	Installed	83956.128	36449.208	114.305	01-04-14	114.306	114.306	114.307
Socket	C305-LB102222	19-03-14	Installed	83944.034	36448.271	114.311	01-04-14	114.313	114.313	114.312

IRS Installation Record Sheets – Sockets

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Socket	C305-LB102301	21-03-14	Installed	83920.734	36387.055	113.663	02-05-14	113.663	113.663	113.663
Socket	C305-LB102302	21-03-14	Installed	83920.898	36373.686	113.559	02-05-14	113.559	113.559	113.559
Socket	C305-LB102303	21-03-14	Installed	83922.219	36363.968	113.473	02-05-14	113.472	113.472	113.473
Socket	C305-LB102401	24-03-14	Installed	83865.240	36374.860	114.179	02-05-14	114.179	114.179	114.179
Socket	C305-LB102404	24-03-14	Installed	83868.366	36410.084	114.276	02-05-14	114.274	114.274	114.274
Socket	C305-LB102405	24-03-14	Installed	83869.976	36423.386	114.476	02-05-14	114.473	114.474	114.473
Socket	C305-LB102501	25-03-14	Installed	83857.893	36372.771	114.850	02-05-14	114.850	114.850	114.850
Socket	C305-LB102502	25-03-14	Installed	83854.033	36371.356	114.840	02-05-14	114.838	114.838	114.838
Socket	C305-LB102503	25-03-14	Installed	83834.858	36392.321	114.340	02-05-14	114.339	114.338	114.339
Socket	C305-LB102603	26-03-14	Installed	83862.076	36338.632	114.209	02-05-14	114.207	114.207	114.207
Socket	C305-LB102607	21-03-14	Installed	83881.360	36312.670	113.914	02-05-14	113.914	113.914	113.914
Socket	C305-LB102701	25-03-14	Installed	83831.566	36381.388	114.489	02-05-14	114.488	114.488	114.488
Socket	C305-LB102702	25-03-14	Installed	83843.751	36369.115	114.079	02-05-14	114.076	114.077	114.077
Socket	C305-LB102703	25-03-14	Installed	83851.945	36359.994	113.923	02-05-14	113.919	113.919	113.919
Socket	C305-LB102704	26-03-14	Installed	83865.614	36341.915	113.628	02-05-14	113.627	113.627	113.627
Socket	C305-LB102705	26-03-14	Installed	83854.988	36340.615	113.723	02-05-14	113.721	113.721	113.721
Socket	C305-LB102706	26-03-14	Installed	83840.212	36338.432	114.035	02-05-14	114.032	114.031	114.032
Socket	C305-LB102708	27-03-14	Installed	83826.622	36362.028	114.734	02-05-14	114.732	114.732	114.732
Socket	C305-LB102709	27-03-14	Installed	83828.244	36351.570	114.700	02-05-14	114.698	114.697	114.698
Socket	C305-LB102801	26-03-14	Installed	83828.626	36336.571	113.887	02-05-14	113.886	113.886	113.886
Socket	C305-LB102802	26-03-14	Installed	83823.165	36335.637	113.789	02-05-14	113.788	113.788	113.788
Socket	C305-LB102803	27-03-14	Installed	83801.908	36358.139	114.335	02-05-14	114.334	114.335	114.334
Socket	C305-LB102804	27-03-14	Installed	83807.784	36348.543	114.061	02-05-14	114.060	114.060	114.060
Socket	C305-LB102805	27-03-14	Installed	83808.954	36346.947	114.081	02-05-14	114.080	114.080	114.080
Socket	C305-LB103001	28-03-14	Installed	83678.235	36295.485	114.468	07-05-14	114.468	114.468	114.468
Socket	C305-LB103002	28-03-14	Installed	83691.875	36288.319	114.359	07-05-14	114.359	114.358	114.358
Socket	C305-LB103003	28-03-14	Installed	83695.918	36289.066	114.468	07-05-14	114.467	114.467	114.467
Socket	C305-LB103004	28-03-14	Installed	83713.658	36279.766	114.917	07-05-14	114.917	114.917	114.917

IRS Installation Record Sheets – Sockets

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Socket	C305-LB103101	31-03-14	Installed	83744.162	36240.716	115.776	08-05-14	115.778	115.778	115.777
Socket	C305-LB103102	31-03-14	Installed	83741.193	36234.087	116.012	08-05-14	116.012	116.012	116.012
Socket	C305-LB103103	31-03-14	Installed	83738.355	36234.751	115.993	08-05-14	115.994	115.994	115.994
Socket	C305-LB103108	31-03-14	Installed	83672.076	36261.655	115.167	08-05-14	115.168	115.168	115.168
Socket	C305-LB103109	31-03-14	Installed	83662.979	36266.391	115.066	08-05-14	115.068	115.068	115.068
Socket	C305-LB103110	31-03-14	Installed	83656.795	36288.948	115.269	08-05-14	115.270	115.270	115.270
Socket	C305-LB103111	31-03-14	Installed	83665.813	36300.194	115.273	08-05-14	115.274	115.274	115.274
Socket	C305-LB103112	31-03-14	Installed	83675.976	36292.250	114.386	08-05-14	114.387	114.387	114.387
Socket	C305-LB103113	31-03-14	Installed	83675.904	36285.553	114.603	08-05-14	114.604	114.604	114.604
Socket	C305-LB103201	01-04-14	Installed	83704.541	36235.163	116.127	08-05-14	116.128	116.128	116.128
Socket	C305-LB103202	01-04-14	Installed	83690.910	36242.910	116.016	08-05-14	116.017	116.016	116.017
Socket	C305-LB103301	01-04-14	Installed	83767.101	36250.612	115.797	08-05-14	115.799	115.798	115.798
Socket	C305-LB103302	01-04-14	Installed	83751.080	36238.335	116.822	08-05-14	116.824	116.824	116.824
Socket	C305-LB103303	01-04-14	Installed	83740.319	36212.293	116.779	08-05-14	116.780	116.780	116.780
Socket	C305-LB103305	01-04-14	Installed	83710.270	36222.453	115.801	08-05-14	115.802	115.802	115.802
Socket	C305-LB103306	01-04-14	Installed	83695.633	36230.592	115.692	08-05-14	115.692	115.692	115.693
Socket	C305-LB103307	01-04-14	Installed	83689.046	36225.859	116.555	08-05-14	116.555	116.555	116.555
Socket	C305-LB103309	01-04-14	Installed	83675.475	36241.739	115.607	08-05-14	115.608	115.608	115.608
Socket	C305-LB103310	02-04-14	Installed	83667.899	36245.898	115.433	08-05-14	115.434	115.434	115.434
Socket	C305-LB103403	01-03-14	Installed	83635.384	36246.893	115.204	08-05-14	115.204	115.204	115.204
Socket	C305-LB103404	01-03-14	Installed	83629.819	36238.191	115.504	08-05-14	115.504	115.504	115.504
Socket	C305-LB103501	02-04-14	Installed	83613.568	36215.790	115.450	08-05-14	115.449	115.449	115.449
Socket	C305-LB103502	02-04-14	Installed	83625.213	36208.041	115.636	08-05-14	115.635	115.635	115.635
Socket	C305-LB103503	02-04-14	Installed	83632.359	36204.752	115.897	08-05-14	115.896	115.896	115.896
Socket	C305-LB103504	03-04-14	Installed	83638.983	36201.685	116.017	08-05-14	116.016	116.017	116.017
Socket	C305-LB103505	03-04-14	Installed	83649.446	36196.796	116.255	08-05-14	116.255	116.255	116.255
Socket	C305-LB103506	03-04-14	Installed	83655.831	36193.845	116.292	08-05-14	116.291	116.291	116.291
Socket	C305-LB103507	03-04-14	Installed	83664.557	36189.700	116.420	08-05-14	116.420	116.420	116.420

IRS Installation Record Sheets – Sockets

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Socket	C305-LB103701	22-05-14	Installed	83599.811	36300.386	116.438	09-05-14	116.438	116.438	116.438
Socket	C305-LB103702	22-05-14	Installed	83594.480	36285.735	115.382	09-05-14	115.381	115.381	115.382
Socket	C305-LB103703	22-05-14	Installed	83591.387	36274.128	115.908	09-05-14	115.908	115.908	115.908
Socket	C305-LB103704	23-03-14	Installed	83609.628	36261.031	115.196	09-05-14	115.196	115.196	115.196
Socket	C305-LB103705	23-03-14	Installed	83605.912	36248.041	115.251	09-05-14	115.247	115.247	115.248
Socket	C305-LB103706	23-03-14	Installed	83593.322	36221.371	115.692	09-05-14	115.692	115.692	115.692
Socket	C305-LB103707	23-03-14	Installed	83566.649	36231.144	115.186	09-05-14	115.186	115.187	115.187
Socket	C305-LB103708	23-03-14	Installed	83609.628	36261.031	114.861	09-05-14	114.862	114.862	114.862
Socket	C305-LB103709	22-05-14	Installed	83605.912	36248.041	115.011	09-05-14	115.011	115.011	115.011
Socket	C305-LB103710	22-05-14	Installed	83593.322	36221.371	115.006	09-05-14	115.007	115.006	115.005
Socket	C305-LB103711	22-05-14	Installed	83566.649	36231.144	115.009	09-05-14	115.008	115.009	115.009
Socket	C305-LB103712	22-05-14	Installed	83554.931	36245.765	115.010	09-05-14	115.010	115.010	115.010
Socket	C305-LB103713	22-05-14	Installed	83476.146	36297.358	115.618	09-05-14	115.618	115.618	115.618
Socket	C305-LB103714	22-05-14	Installed	83474.261	36298.221	115.606	09-05-14	115.607	115.606	115.607
Socket	C305-LB103715	22-05-14	Installed	83475.332	36304.784	115.094	09-05-14	115.094	115.095	115.094
Socket	C305-LB103801	23-03-14	Installed	83582.210	36203.956	115.432	09-05-14	115.432	115.432	115.431
Socket	C305-LB103802	23-03-14	Installed	83572.808	36185.564	115.826	09-05-14	115.826	115.826	115.826
Socket	C305-LB103908	23-03-14	Installed	83551.508	36142.874	115.843	09-05-14	115.843	115.843	115.843
Socket	C305-LB103909	23-03-14	Installed	83542.861	36129.526	115.724	09-05-14	115.725	115.725	115.725
Socket	C305-LB104001	05-07-14	Installed	83514.304	36199.802	115.621	17-07-14	115.621	115.620	115.621
Socket	C305-LB104002	05-07-14	Installed	83540.775	36192.226	116.335	17-07-14	116.334	116.335	116.334
Socket	C305-LB104003	05-07-14	Installed	83554.215	36188.206	116.413	17-07-14	116.413	116.413	116.413
Socket	C305-LB104004	05-07-14	Installed	83568.370	36184.140	116.491	17-07-14	116.491	116.491	116.491
Socket	C305-LB104005	05-07-14	Installed	83563.452	36166.821	117.426	17-07-14	117.426	117.426	117.426
Socket	C305-LB104006	05-07-14	Installed	83545.227	36171.797	117.656	17-07-14	117.656	117.657	117.656
Socket	C305-LB104007	05-07-14	Installed	83534.049	36174.893	117.492	17-07-14	117.493	117.492	117.492
Socket	C305-LB104008	05-07-14	Installed	83515.363	36181.926	116.424	17-07-14	116.425	116.425	116.425

Note: All elevations or levels presented in this document are metres above tunnel datum (mATD).

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP100101	21-01-14	Installed	84770.098	36529.424	113.214	24-01-14	113.214	113.214	113.214
Levelling Point	C305-LP100102	21-01-14	Installed	84769.648	36536.236	112.996	24-01-14	112.995	112.996	112.996
Levelling Point	C305-LP100103	21-01-14	Installed	84769.468	36542.270	112.870	24-01-14	112.870	112.870	112.870
Levelling Point	C305-LP100104	21-01-14	Installed	84768.006	36547.052	112.878	24-01-14	112.878	112.878	112.877
Levelling Point	C305-LP100105	21-01-14	Installed	84765.992	36551.628	112.924	24-01-14	112.924	112.923	112.923
Levelling Point	C305-LP100106	21-01-14	Installed	84764.150	36556.336	112.922	24-01-14	112.922	112.922	112.922
Levelling Point	C305-LP100107	21-01-14	Installed	84762.490	36561.052	112.965	24-01-14	112.965	112.965	112.965
Levelling Point	C305-LP100108	21-01-14	Installed	84760.978	36565.818	113.101	24-01-14	113.101	113.101	113.101
Levelling Point	C305-LP100109	21-01-14	Installed	84759.609	36570.416	113.221	24-01-14	113.222	113.221	113.221
Levelling Point	C305-LP100110	21-01-14	Installed	84754.896	36572.714	113.166	24-01-14	113.167	113.166	113.166
Levelling Point	C305-LP100111	21-01-14	Installed	84754.484	36578.604	113.106	24-01-14	113.107	113.107	113.107
Levelling Point	C305-LP100112	21-01-14	Installed	84753.789	36583.784	113.112	24-01-14	113.112	113.111	113.111
Levelling Point	C305-LP100113	21-01-14	Installed	84753.418	36589.740	113.023	24-01-14	113.023	113.023	113.023
Levelling Point	C305-LP100201	21-01-14	Installed	84653.115	36505.606	113.349	11-02-14	113.348	113.349	113.348
Levelling Point	C305-LP100202	21-01-14	Installed	84653.416	36510.330	113.255	11-02-14	113.254	113.255	113.255
Levelling Point	C305-LP100203	21-01-14	Installed	84658.542	36510.660	113.251	11-02-14	113.251	113.251	113.251
Levelling Point	C305-LP100204	21-01-14	Installed	84663.224	36510.581	113.280	11-02-14	113.280	113.280	113.280
Levelling Point	C305-LP100205	21-01-14	Installed	84668.178	36512.649	113.398	11-02-14	113.398	113.397	113.398
Levelling Point	C305-LP100206	21-01-14	Installed	84670.103	36517.402	113.429	11-02-14	113.429	113.429	113.430
Levelling Point	C305-LP100207	21-01-14	Installed	84665.608	36519.535	113.389	11-02-14	113.389	113.389	113.389
Levelling Point	C305-LP100208	21-01-14	Installed	84664.634	36524.477	113.297	11-02-14	113.297	113.297	113.297
Levelling Point	C305-LP100209	21-01-14	Installed	84664.059	36526.686	113.291	11-02-14	113.291	113.290	113.290
Levelling Point	C305-LP100210	21-01-14	Installed	84663.138	36529.303	113.262	11-02-14	113.262	113.262	113.261
Levelling Point	C305-LP100211	21-01-14	Installed	84661.886	36531.781	113.234	11-02-14	113.234	113.234	113.234
Levelling Point	C305-LP100212	21-01-14	Installed	84660.764	36533.700	113.227	11-02-14	113.227	113.227	113.227
Levelling Point	C305-LP100213	21-01-14	Installed	84659.407	36535.842	113.212	11-02-14	113.212	113.212	113.212
Levelling Point	C305-LP100214	21-01-14	Installed	84658.277	36537.972	113.184	11-02-14	113.184	113.184	113.184
Levelling Point	C305-LP100215	21-01-14	Installed	84657.935	36540.673	113.175	11-02-14	113.176	113.175	113.175

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP100216	21-01-14	Installed	84657.685	36543.060	113.160	11-02-14	113.160	113.159	113.159
Levelling Point	C305-LP100217	21-01-14	Installed	84657.230	36545.252	113.143	11-02-14	113.142	113.143	113.142
Levelling Point	C305-LP100218	21-01-14	Installed	84656.916	36547.526	113.126	11-02-14	113.126	113.127	113.126
Levelling Point	C305-LP100219	21-01-14	Installed	84656.647	36550.034	113.113	11-02-14	113.113	113.113	113.113
Levelling Point	C305-LP100220	21-01-14	Installed	84656.323	36552.740	113.106	11-02-14	113.107	113.106	113.106
Levelling Point	C305-LP100221	21-01-14	Installed	84656.047	36555.190	113.100	11-02-14	113.100	113.100	113.100
Levelling Point	C305-LP100222	21-01-14	Installed	84655.732	36557.617	113.084	11-02-14	113.084	113.084	113.084
Levelling Point	C305-LP100223	21-01-14	Installed	84655.600	36559.703	113.071	11-02-14	113.071	113.072	113.071
Levelling Point	C305-LP100224	21-01-14	Installed	84655.447	36562.601	113.090	11-02-14	113.090	113.090	113.090
Levelling Point	C305-LP100225	21-01-14	Installed	84655.434	36565.520	113.111	11-02-14	113.111	113.111	113.111
Levelling Point	C305-LP100226	21-01-14	Installed	84655.524	36567.611	113.132	11-02-14	113.131	113.132	113.131
Levelling Point	C305-LP100227	21-01-14	Installed	84655.470	36570.107	113.169	11-02-14	113.169	113.169	113.169
Levelling Point	C305-LP100228	21-01-14	Installed	84655.935	36572.567	113.195	11-02-14	113.194	113.195	113.195
Levelling Point	C305-LP100229	21-01-14	Installed	84658.521	36573.602	113.227	11-02-14	113.227	113.227	113.227
Levelling Point	C305-LP100230	21-01-14	Installed	84661.293	36573.530	113.227	11-02-14	113.227	113.227	113.227
Levelling Point	C305-LP100231	21-01-14	Installed	84659.365	36579.904	113.059	11-02-14	113.058	113.059	113.059
Levelling Point	C305-LP100301	23-01-14	Installed	84508.955	36503.627	112.820	10-02-14	112.821	112.820	112.820
Levelling Point	C305-LP100302	23-01-14	Installed	84513.843	36504.487	112.653	10-02-14	112.653	112.654	112.653
Levelling Point	C305-LP100303	23-01-14	Installed	84518.997	36505.250	112.731	10-02-14	112.731	112.730	112.730
Levelling Point	C305-LP100304	23-01-14	Installed	84523.749	36506.046	112.690	10-02-14	112.690	112.690	112.690
Levelling Point	C305-LP100305	23-01-14	Installed	84528.670	36506.808	112.670	10-02-14	112.669	112.670	112.670
Levelling Point	C305-LP100306	23-01-14	Installed	84533.231	36507.470	112.662	10-02-14	112.662	112.662	112.662
Levelling Point	C305-LP100307	23-01-14	Installed	84538.544	36508.347	112.646	10-02-14	112.646	112.646	112.646
Levelling Point	C305-LP100308	23-01-14	Installed	84543.808	36509.172	112.637	10-02-14	112.637	112.637	112.637
Levelling Point	C305-LP100309	23-01-14	Installed	84545.086	36517.164	112.561	10-02-14	112.561	112.561	112.561
Levelling Point	C305-LP100310	23-01-14	Installed	84544.388	36522.150	112.542	10-02-14	112.541	112.542	112.542
Levelling Point	C305-LP100311	23-01-14	Installed	84544.061	36524.513	112.544	10-02-14	112.543	112.543	112.544
Levelling Point	C305-LP100312	23-01-14	Installed	84543.750	36527.035	112.536	10-02-14	112.536	112.536	112.536

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP100313	23-01-14	Installed	84543.427	36529.217	112.520	10-02-14	112.520	112.520	112.520
Levelling Point	C305-LP100314	23-01-14	Installed	84543.096	36531.975	112.500	10-02-14	112.501	112.500	112.500
Levelling Point	C305-LP100315	23-01-14	Installed	84542.786	36534.495	112.481	10-02-14	112.481	112.481	112.481
Levelling Point	C305-LP100316	23-01-14	Installed	84542.498	36536.936	112.474	10-02-14	112.474	112.474	112.474
Levelling Point	C305-LP100317	23-01-14	Installed	84542.090	36539.300	112.461	10-02-14	112.460	112.460	112.460
Levelling Point	C305-LP100318	23-01-14	Installed	84541.666	36542.255	112.445	10-02-14	112.444	112.444	112.444
Levelling Point	C305-LP100319	23-01-14	Installed	84541.428	36544.668	112.280	10-02-14	112.279	112.280	112.279
Levelling Point	C305-LP100320	23-01-14	Installed	84541.148	36547.152	112.261	10-02-14	112.261	112.261	112.261
Levelling Point	C305-LP100321	23-01-14	Installed	84540.769	36549.523	112.246	10-02-14	112.246	112.246	112.246
Levelling Point	C305-LP100322	23-01-14	Installed	84540.537	36551.972	112.241	10-02-14	112.241	112.241	112.241
Levelling Point	C305-LP100323	23-01-14	Installed	84540.222	36554.529	112.273	10-02-14	112.273	112.273	112.273
Levelling Point	C305-LP100324	23-01-14	Installed	84539.811	36556.939	112.296	10-02-14	112.296	112.296	112.296
Levelling Point	C305-LP100325	23-01-14	Installed	84539.396	36559.500	112.450	10-02-14	112.451	112.451	112.451
Levelling Point	C305-LP100326	23-01-14	Installed	84539.091	36561.971	112.500	10-02-14	112.500	112.500	112.500
Levelling Point	C305-LP100327	23-01-14	Installed	84538.829	36564.452	112.515	10-02-14	112.515	112.516	112.516
Levelling Point	C305-LP100328	23-01-14	Installed	84538.404	36566.922	112.572	10-02-14	112.571	112.571	112.571
Levelling Point	C305-LP100329	23-01-14	Installed	84538.234	36569.416	112.599	10-02-14	112.599	112.599	112.600
Levelling Point	C305-LP100330	23-01-14	Installed	84537.899	36571.893	112.638	10-02-14	112.636	112.637	112.637
Levelling Point	C305-LP100331	23-01-14	Installed	84537.144	36576.836	112.707	10-02-14	112.708	112.708	112.708
Levelling Point	C305-LP100332	23-01-14	Installed	84535.377	36581.321	112.777	10-02-14	112.778	112.777	112.777
Levelling Point	C305-LP100333	23-01-14	Installed	84536.207	36588.520	112.703	10-02-14	112.703	112.703	112.703
Levelling Point	C305-LP100334	23-01-14	Installed	84537.060	36593.447	112.584	10-02-14	112.585	112.584	112.584
Levelling Point	C305-LP100335	23-01-14	Installed	84537.868	36598.404	112.449	10-02-14	112.449	112.449	112.449
Levelling Point	C305-LP100336	23-01-14	Installed	84538.855	36603.320	112.316	10-02-14	112.316	112.315	112.315
Levelling Point	C305-LP100337	23-01-14	Installed	84539.669	36608.056	112.210	10-02-14	112.210	112.209	112.210
Levelling Point	C305-LP100401	23-01-14	Installed	84441.747	36537.788	112.806	10-02-14	112.806	112.806	112.806
Levelling Point	C305-LP100402	23-01-14	Installed	84444.501	36541.961	112.794	10-02-14	112.794	112.794	112.794
Levelling Point	C305-LP100403	23-01-14	Installed	84444.726	36544.522	112.764	10-02-14	112.764	112.764	112.764

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP100404	23-01-14	Installed	84445.142	36546.987	112.737	10-02-14	112.737	112.737	112.736
Levelling Point	C305-LP100405	23-01-14	Installed	84445.428	36549.468	112.713	10-02-14	112.712	112.713	112.712
Levelling Point	C305-LP100406	23-01-14	Installed	84445.663	36551.957	112.672	10-02-14	112.672	112.672	112.672
Levelling Point	C305-LP100407	23-01-14	Installed	84445.917	36554.440	112.668	10-02-14	112.668	112.668	112.668
Levelling Point	C305-LP100408	23-01-14	Installed	84446.207	36556.923	112.649	10-02-14	112.648	112.648	112.648
Levelling Point	C305-LP100409	23-01-14	Installed	84446.538	36559.396	112.621	10-02-14	112.621	112.620	112.621
Levelling Point	C305-LP100410	23-01-14	Installed	84446.794	36561.883	112.613	10-02-14	112.612	112.613	112.612
Levelling Point	C305-LP100411	23-01-14	Installed	84446.967	36564.377	112.597	10-02-14	112.597	112.597	112.597
Levelling Point	C305-LP100412	23-01-14	Installed	84447.689	36569.326	112.580	10-02-14	112.580	112.580	112.580
Levelling Point	C305-LP100413	23-01-14	Installed	84448.238	36574.296	112.543	10-02-14	112.543	112.543	112.543
Levelling Point	C305-LP100414	23-01-14	Installed	84448.884	36579.254	112.522	10-02-14	112.522	112.522	112.522
Levelling Point	C305-LP100415	23-01-14	Installed	84449.552	36584.161	112.492	10-02-14	112.492	112.492	112.492
Levelling Point	C305-LP100416	23-01-14	Installed	84450.127	36589.335	112.463	10-02-14	112.463	112.463	112.463
Levelling Point	C305-LP100417	23-01-14	Installed	84450.170	36594.204	112.472	10-02-14	112.472	112.472	112.472
Levelling Point	C305-LP100418	23-01-14	Installed	84451.079	36600.575	112.444	10-02-14	112.444	112.444	112.444
Levelling Point	C305-LP100501	23-01-14	Installed	84494.783	36510.524	112.922	10-02-14	112.922	112.922	112.923
Levelling Point	C305-LP100502	23-01-14	Installed	84490.849	36513.023	112.886	10-02-14	112.886	112.886	112.886
Levelling Point	C305-LP100503	23-01-14	Installed	84486.214	36515.596	112.842	10-02-14	112.842	112.842	112.842
Levelling Point	C305-LP100504	23-01-14	Installed	84481.959	36517.727	112.836	10-02-14	112.836	112.835	112.836
Levelling Point	C305-LP100505	23-01-14	Installed	84477.531	36519.909	112.847	10-02-14	112.848	112.847	112.847
Levelling Point	C305-LP100506	23-01-14	Installed	84472.888	36522.354	112.874	10-02-14	112.874	112.874	112.873
Levelling Point	C305-LP100507	23-01-14	Installed	84468.553	36524.425	112.867	10-02-14	112.867	112.868	112.867
Levelling Point	C305-LP100508	23-01-14	Installed	84464.170	36526.673	112.848	10-02-14	112.848	112.848	112.848
Levelling Point	C305-LP100509	23-01-14	Installed	84459.608	36528.898	112.820	10-02-14	112.820	112.819	112.820
Levelling Point	C305-LP100510	23-01-14	Installed	84455.026	36531.201	112.810	10-02-14	112.810	112.810	112.810
Levelling Point	C305-LP100511	23-01-14	Installed	84450.727	36533.363	112.805	10-02-14	112.805	112.805	112.805
Levelling Point	C305-LP100512	23-01-14	Installed	84446.257	36535.569	112.800	10-02-14	112.800	112.799	112.799
Levelling Point	C305-LP100513	23-01-14	Installed	84437.641	36540.280	112.844	10-02-14	112.844	112.844	112.844

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP100514	23-01-14	Installed	84432.941	36542.596	112.851	10-02-14	112.851	112.851	112.851
Levelling Point	C305-LP100515	23-01-14	Installed	84428.490	36544.852	112.843	10-02-14	112.843	112.843	112.843
Levelling Point	C305-LP100516	23-01-14	Installed	84423.760	36546.865	112.834	10-02-14	112.834	112.834	112.834
Levelling Point	C305-LP100517	23-01-14	Installed	84419.461	36548.956	112.826	10-02-14	112.827	112.826	112.827
Levelling Point	C305-LP100518	23-01-14	Installed	84414.901	36551.143	112.820	10-02-14	112.820	112.820	112.820
Levelling Point	C305-LP100519	23-01-14	Installed	84410.281	36553.386	112.797	10-02-14	112.797	112.797	112.796
Levelling Point	C305-LP100520	23-01-14	Installed	84405.966	36555.486	112.728	10-02-14	112.727	112.728	112.727
Levelling Point	C305-LP100521	23-01-14	Installed	84401.409	36557.619	112.665	10-02-14	112.665	112.665	112.665
Levelling Point	C305-LP100522	23-01-14	Installed	84396.789	36559.852	112.611	10-02-14	112.611	112.611	112.611
Levelling Point	C305-LP100523	23-01-14	Installed	84392.504	36561.966	112.549	10-02-14	112.549	112.549	112.549
Levelling Point	C305-LP100524	23-01-14	Installed	84388.179	36564.018	112.473	10-02-14	112.473	112.473	112.473
Levelling Point	C305-LP100525	23-01-14	Installed	84383.299	36566.319	112.410	10-02-14	112.410	112.409	112.410
Levelling Point	C305-LP100526	23-01-14	Installed	84378.428	36568.585	112.366	10-02-14	112.367	112.366	112.367
Levelling Point	C305-LP100527	23-01-14	Installed	84374.080	36570.646	112.328	10-02-14	112.328	112.328	112.328
Levelling Point	C305-LP100528	23-01-14	Installed	84369.730	36572.644	112.310	10-02-14	112.310	112.309	112.310
Levelling Point	C305-LP100601	23-01-14	Installed	84401.295	36503.072	112.826	10-02-14	112.826	112.826	112.826
Levelling Point	C305-LP100602	23-01-14	Installed	84401.349	36508.025	112.744	10-02-14	112.744	112.744	112.744
Levelling Point	C305-LP100603	23-01-14	Installed	84401.356	36512.994	112.664	10-02-14	112.664	112.664	112.664
Levelling Point	C305-LP100604	23-01-14	Installed	84401.425	36517.979	112.596	10-02-14	112.596	112.596	112.596
Levelling Point	C305-LP100605	23-01-14	Installed	84402.200	36522.943	112.557	10-02-14	112.557	112.557	112.556
Levelling Point	C305-LP100606	23-01-14	Installed	84404.282	36527.220	112.610	10-02-14	112.610	112.610	112.610
Levelling Point	C305-LP100607	23-01-14	Installed	84405.314	36529.402	112.633	10-02-14	112.633	112.632	112.632
Levelling Point	C305-LP100608	23-01-14	Installed	84406.559	36532.139	112.663	10-02-14	112.663	112.663	112.663
Levelling Point	C305-LP100609	23-01-14	Installed	84407.619	36534.296	112.684	10-02-14	112.684	112.684	112.684
Levelling Point	C305-LP100610	23-01-14	Installed	84408.593	36536.482	112.708	10-02-14	112.708	112.709	112.708
Levelling Point	C305-LP100611	23-01-14	Installed	84409.669	36538.633	112.741	10-02-14	112.741	112.741	112.741
Levelling Point	C305-LP100612	23-01-14	Installed	84410.760	36540.913	112.787	10-02-14	112.787	112.787	112.787
Levelling Point	C305-LP100613	23-01-14	Installed	84412.284	36542.679	112.852	10-02-14	112.853	112.852	112.852

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP100701	03-02-14	Installed	84227.833	36498.716	114.332	26-02-14	114.331	114.332	114.332
Levelling Point	C305-LP100702	03-02-14	Installed	84228.063	36503.678	114.231	26-02-14	114.231	114.232	114.231
Levelling Point	C305-LP100703	03-02-14	Installed	84227.078	36508.571	114.182	26-02-14	114.182	114.182	114.181
Levelling Point	C305-LP100704	03-02-14	Installed	84226.549	36513.237	114.113	26-02-14	114.113	114.113	114.113
Levelling Point	C305-LP100705	03-02-14	Installed	84225.632	36523.690	113.971	26-02-14	113.971	113.971	113.971
Levelling Point	C305-LP100706	03-02-14	Installed	84225.560	36526.036	114.004	26-02-14	114.004	114.004	114.004
Levelling Point	C305-LP100707	03-02-14	Installed	84225.349	36528.518	114.033	26-02-14	114.033	114.033	114.034
Levelling Point	C305-LP100708	03-02-14	Installed	84225.237	36531.016	114.054	26-02-14	114.054	114.054	114.054
Levelling Point	C305-LP100709	03-02-14	Installed	84225.128	36533.440	114.080	26-02-14	114.080	114.080	114.080
Levelling Point	C305-LP100710	03-02-14	Installed	84225.039	36535.927	114.095	26-02-14	114.095	114.095	114.095
Levelling Point	C305-LP100711	03-02-14	Installed	84224.844	36538.387	114.115	26-02-14	114.115	114.115	114.115
Levelling Point	C305-LP100712	03-02-14	Installed	84224.881	36540.869	114.132	26-02-14	114.132	114.132	114.132
Levelling Point	C305-LP100713	03-02-14	Installed	84224.740	36543.975	114.153	26-02-14	114.153	114.153	114.153
Levelling Point	C305-LP100714	03-02-14	Installed	84224.652	36546.464	114.160	26-02-14	114.160	114.161	114.160
Levelling Point	C305-LP100715	03-02-14	Installed	84224.341	36548.904	114.164	26-02-14	114.164	114.164	114.165
Levelling Point	C305-LP100716	03-02-14	Installed	84224.191	36551.382	114.155	26-02-14	114.155	114.155	114.155
Levelling Point	C305-LP100717	03-02-14	Installed	84223.979	36553.241	114.141	26-02-14	114.141	114.142	114.142
Levelling Point	C305-LP100718	03-02-14	Installed	84223.961	36555.694	114.114	26-02-14	114.114	114.114	114.114
Levelling Point	C305-LP100719	03-02-14	Installed	84223.696	36558.162	114.105	26-02-14	114.105	114.106	114.106
Levelling Point	C305-LP100720	03-02-14	Installed	84223.889	36560.638	114.078	26-02-14	114.077	114.078	114.078
Levelling Point	C305-LP100721	03-02-14	Installed	84223.656	36563.097	114.060	26-02-14	114.059	114.059	114.060
Levelling Point	C305-LP100722	03-02-14	Installed	84223.229	36565.553	114.048	26-02-14	114.048	114.048	114.048
Levelling Point	C305-LP100723	03-02-14	Installed	84223.475	36568.015	114.020	26-02-14	114.020	114.020	114.020
Levelling Point	C305-LP100724	03-02-14	Installed	84222.914	36572.962	113.971	26-02-14	113.971	113.970	113.971
Levelling Point	C305-LP100725	03-02-14	Installed	84222.539	36583.534	113.858	26-02-14	113.858	113.858	113.859
Levelling Point	C305-LP100726	03-02-14	Installed	84222.852	36588.408	113.784	26-02-14	113.784	113.784	113.784
Levelling Point	C305-LP100727	03-02-14	Installed	84223.173	36593.398	113.693	26-02-14	113.693	113.693	113.693
Levelling Point	C305-LP100801	03-02-14	Installed	84225.499	36517.798	114.017	26-02-14	114.017	114.016	114.017

IRS Installation Record Sheets – Levelling Points

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Levelling Point	C305-LP100802	03-02-14	Installed	84220.509	36517.658	113.998	26-02-14	113.998	113.998	113.998
Levelling Point	C305-LP100803	03-02-14	Installed	84215.488	36517.773	113.997	26-02-14	113.997	113.997	113.997
Levelling Point	C305-LP100804	03-02-14	Installed	84210.470	36517.693	114.057	26-02-14	114.057	114.057	114.057
Levelling Point	C305-LP100805	03-02-14	Installed	84205.527	36517.833	114.082	26-02-14	114.082	114.082	114.082
Levelling Point	C305-LP100806	03-02-14	Installed	84200.530	36517.861	114.115	26-02-14	114.115	114.115	114.115
Levelling Point	C305-LP100807	03-02-14	Installed	84195.536	36517.885	114.157	26-02-14	114.157	114.157	114.157
Levelling Point	C305-LP100808	03-02-14	Installed	84190.529	36517.915	114.191	26-02-14	114.191	114.191	114.191
Levelling Point	C305-LP100809	03-02-14	Installed	84185.592	36517.935	114.264	26-02-14	114.264	114.264	114.264
Levelling Point	C305-LP100810	03-02-14	Installed	84180.589	36517.969	114.297	26-02-14	114.297	114.297	114.297
Levelling Point	C305-LP100811	03-02-14	Installed	84175.232	36518.007	114.320	26-02-14	114.320	114.320	114.319
Levelling Point	C305-LP100812	03-02-14	Installed	84170.612	36518.031	114.354	26-02-14	114.354	114.354	114.354
Levelling Point	C305-LP100813	03-02-14	Installed	84165.647	36518.127	114.379	26-02-14	114.379	114.379	114.380
Levelling Point	C305-LP100814	03-02-14	Installed	84160.590	36518.088	114.418	26-02-14	114.417	114.417	114.418
Levelling Point	C305-LP100815	03-02-14	Installed	84155.265	36518.207	114.426	26-02-14	114.426	114.426	114.425
Levelling Point	C305-LP100816	03-02-14	Installed	84150.590	36518.148	114.473	26-02-14	114.473	114.472	114.472
Levelling Point	C305-LP100817	03-02-14	Installed	84145.576	36518.173	114.533	26-02-14	114.533	114.533	114.533
Levelling Point	C305-LP100818	03-02-14	Installed	84140.633	36518.209	114.597	26-02-14	114.598	114.597	114.597
Levelling Point	C305-LP100819	03-02-14	Installed	84135.644	36518.220	114.644	26-02-14	114.644	114.644	114.644
Levelling Point	C305-LP100820	03-02-14	Installed	84130.685	36518.241	114.681	26-02-14	114.680	114.680	114.680
Levelling Point	C305-LP100821	03-02-14	Installed	84125.707	36518.290	114.726	26-02-14	114.727	114.726	114.726
Levelling Point	C305-LP100901	03-02-14	Installed	84112.125	36474.377	115.001	26-02-14	115.001	115.001	115.001
Levelling Point	C305-LP100902	03-02-14	Installed	84112.638	36479.073	114.951	26-02-14	114.951	114.951	114.951
Levelling Point	C305-LP100903	03-02-14	Installed	84113.208	36483.827	114.928	26-02-14	114.928	114.928	114.928
Levelling Point	C305-LP100904	03-02-14	Installed	84113.851	36489.213	114.890	26-02-14	114.890	114.890	114.890
Levelling Point	C305-LP100905	03-02-14	Installed	84114.436	36494.095	114.858	26-02-14	114.858	114.858	114.858
Levelling Point	C305-LP100906	03-02-14	Installed	84115.020	36498.988	114.828	26-02-14	114.828	114.828	114.828
Levelling Point	C305-LP100907	03-02-14	Installed	84115.585	36503.772	114.769	26-02-14	114.769	114.769	114.769
Levelling Point	C305-LP100908	03-02-14	Installed	84115.906	36506.756	114.727	26-02-14	114.727	114.727	114.727

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP100909	03-02-14	Installed	84116.168	36509.148	114.702	26-02-14	114.702	114.703	114.702
Levelling Point	C305-LP100910	03-02-14	Installed	84116.464	36511.821	114.691	26-02-14	114.691	114.691	114.691
Levelling Point	C305-LP100911	03-02-14	Installed	84116.741	36514.109	114.671	26-02-14	114.671	114.671	114.672
Levelling Point	C305-LP100912	03-02-14	Installed	84117.014	36516.601	114.667	26-02-14	114.667	114.667	114.667
Levelling Point	C305-LP100913	03-02-14	Installed	84117.314	36518.988	114.623	26-02-14	114.623	114.622	114.622
Levelling Point	C305-LP100914	03-02-14	Installed	84117.548	36521.164	114.630	26-02-14	114.630	114.630	114.630
Levelling Point	C305-LP100915	03-02-14	Installed	84117.906	36524.065	114.606	26-02-14	114.606	114.606	114.606
Levelling Point	C305-LP100916	03-02-14	Installed	84118.170	36526.545	114.605	26-02-14	114.605	114.604	114.605
Levelling Point	C305-LP100917	03-02-14	Installed	84118.491	36528.930	114.574	26-02-14	114.574	114.574	114.574
Levelling Point	C305-LP100918	03-02-14	Installed	84118.832	36531.709	114.552	26-02-14	114.552	114.552	114.552
Levelling Point	C305-LP100919	03-02-14	Installed	84119.081	36534.097	114.531	26-02-14	114.532	114.532	114.531
Levelling Point	C305-LP100920	03-02-14	Installed	84119.483	36536.576	114.501	26-02-14	114.501	114.501	114.501
Levelling Point	C305-LP100921	03-02-14	Installed	84119.659	36539.077	114.488	26-02-14	114.488	114.488	114.488
Levelling Point	C305-LP100922	03-02-14	Installed	84119.949	36541.556	114.477	26-02-14	114.476	114.477	114.477
Levelling Point	C305-LP100923	03-02-14	Installed	84120.246	36543.930	114.456	26-02-14	114.456	114.456	114.456
Levelling Point	C305-LP100924	03-02-14	Installed	84120.558	36546.818	114.420	26-02-14	114.420	114.420	114.420
Levelling Point	C305-LP100925	03-02-14	Installed	84120.768	36548.715	114.400	26-02-14	114.400	114.400	114.400
Levelling Point	C305-LP100926	03-02-14	Installed	84121.074	36551.701	114.370	26-02-14	114.370	114.370	114.370
Levelling Point	C305-LP100927	03-02-14	Installed	84121.330	36553.990	114.341	26-02-14	114.341	114.341	114.341
Levelling Point	C305-LP100928	03-02-14	Installed	84121.618	36561.422	114.278	26-02-14	114.278	114.278	114.278
Levelling Point	C305-LP100929	03-02-14	Installed	84122.653	36566.045	114.213	26-02-14	114.213	114.213	114.214
Levelling Point	C305-LP100930	03-02-14	Installed	84123.371	36571.308	114.171	26-02-14	114.171	114.171	114.171
Levelling Point	C305-LP100931	03-02-14	Installed	84122.624	36576.299	114.249	26-02-14	114.249	114.249	114.249
Levelling Point	C305-LP100932	03-02-14	Installed	84118.103	36576.250	114.250	26-02-14	114.250	114.249	114.250
Levelling Point	C305-LP100933	03-02-14	Installed	84113.103	36576.195	114.194	26-02-14	114.194	114.194	114.194
Levelling Point	C305-LP100934	03-02-14	Installed	84108.104	36576.141	114.145	26-02-14	114.145	114.145	114.145
Levelling Point	C305-LP100935	03-02-14	Installed	84125.066	36589.738	114.205	26-02-14	114.205	114.205	114.205
Levelling Point	C305-LP101001	04-02-14	Installed	84053.035	36448.939	114.272	26-02-14	114.272	114.271	114.272

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101002	04-02-14	Installed	84052.729	36455.118	114.346	26-02-14	114.346	114.346	114.346
Levelling Point	C305-LP101003	04-02-14	Installed	84051.816	36471.226	114.405	26-02-14	114.404	114.405	114.405
Levelling Point	C305-LP101004	04-02-14	Installed	84051.800	36476.134	114.377	26-02-14	114.377	114.377	114.378
Levelling Point	C305-LP101005	04-02-14	Installed	84051.953	36481.132	114.294	26-02-14	114.294	114.294	114.294
Levelling Point	C305-LP101006	04-02-14	Installed	84052.229	36483.230	114.277	26-02-14	114.277	114.277	114.278
Levelling Point	C305-LP101007	04-02-14	Installed	84052.332	36485.048	114.258	26-02-14	114.259	114.258	114.258
Levelling Point	C305-LP101008	04-02-14	Installed	84052.456	36487.545	114.243	26-02-14	114.242	114.242	114.243
Levelling Point	C305-LP101009	04-02-14	Installed	84052.505	36490.034	114.224	26-02-14	114.224	114.224	114.223
Levelling Point	C305-LP101010	04-02-14	Installed	84052.350	36492.342	114.207	26-02-14	114.206	114.207	114.207
Levelling Point	C305-LP101011	04-02-14	Installed	84052.597	36495.090	114.193	26-02-14	114.194	114.193	114.193
Levelling Point	C305-LP101012	04-02-14	Installed	84052.620	36497.513	114.189	26-02-14	114.189	114.189	114.189
Levelling Point	C305-LP101013	04-02-14	Installed	84052.676	36499.991	114.184	26-02-14	114.184	114.184	114.184
Levelling Point	C305-LP101014	04-02-14	Installed	84052.753	36502.460	114.176	26-02-14	114.176	114.176	114.176
Levelling Point	C305-LP101015	04-02-14	Installed	84052.780	36504.897	114.184	26-02-14	114.184	114.184	114.184
Levelling Point	C305-LP101016	04-02-14	Installed	84052.844	36507.328	114.185	26-02-14	114.184	114.185	114.185
Levelling Point	C305-LP101017	04-02-14	Installed	84052.850	36509.784	114.188	26-02-14	114.188	114.188	114.188
Levelling Point	C305-LP101018	04-02-14	Installed	84052.811	36512.537	114.188	26-02-14	114.188	114.188	114.188
Levelling Point	C305-LP101019	04-02-14	Installed	84052.878	36515.035	114.200	26-02-14	114.200	114.200	114.200
Levelling Point	C305-LP101020	04-02-14	Installed	84052.905	36517.533	114.219	26-02-14	114.219	114.218	114.219
Levelling Point	C305-LP101021	04-02-14	Installed	84052.903	36520.033	114.235	26-02-14	114.235	114.235	114.235
Levelling Point	C305-LP101022	04-02-14	Installed	84053.097	36522.529	114.251	26-02-14	114.251	114.251	114.251
Levelling Point	C305-LP101023	04-02-14	Installed	84053.081	36525.029	114.249	26-02-14	114.249	114.249	114.249
Levelling Point	C305-LP101024	04-02-14	Installed	84053.167	36527.134	114.263	26-02-14	114.263	114.263	114.263
Levelling Point	C305-LP101025	04-02-14	Installed	84053.073	36529.901	114.275	26-02-14	114.275	114.275	114.275
Levelling Point	C305-LP101026	04-02-14	Installed	84053.112	36534.911	114.274	26-02-14	114.274	114.274	114.273
Levelling Point	C305-LP101027	04-02-14	Installed	84053.066	36539.849	114.250	26-02-14	114.250	114.250	114.250
Levelling Point	C305-LP101028	04-02-14	Installed	84053.272	36544.520	114.244	26-02-14	114.244	114.244	114.244
Levelling Point	C305-LP101029	04-02-14	Installed	84053.436	36553.916	114.162	26-02-14	114.162	114.162	114.162

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101030	04-02-14	Installed	84053.478	36560.524	114.134	26-02-14	114.135	114.135	114.134
Levelling Point	C305-LP101101	04-02-14	Installed	84032.550	36452.168	114.033	26-02-14	114.032	114.033	114.033
Levelling Point	C305-LP101102	04-02-14	Installed	84027.886	36452.122	113.948	26-02-14	113.948	113.949	113.949
Levelling Point	C305-LP101103	04-02-14	Installed	84022.462	36451.686	113.936	26-02-14	113.937	113.936	113.936
Levelling Point	C305-LP101104	04-02-14	Installed	84017.632	36451.270	113.932	26-02-14	113.932	113.931	113.932
Levelling Point	C305-LP101105	04-02-14	Installed	84012.792	36450.925	113.927	26-02-14	113.926	113.927	113.927
Levelling Point	C305-LP101106	04-02-14	Installed	84007.348	36450.501	113.942	26-02-14	113.942	113.942	113.942
Levelling Point	C305-LP101107	04-02-14	Installed	84002.517	36450.080	113.954	26-02-14	113.954	113.954	113.955
Levelling Point	C305-LP101108	04-02-14	Installed	83997.663	36449.937	113.985	26-02-14	113.985	113.986	113.985
Levelling Point	C305-LP101109	04-02-14	Installed	83995.337	36449.669	113.981	26-02-14	113.981	113.980	113.981
Levelling Point	C305-LP101110	04-02-14	Installed	83992.854	36449.383	113.990	26-02-14	113.991	113.990	113.990
Levelling Point	C305-LP101111	04-02-14	Installed	83989.827	36448.991	113.989	26-02-14	113.989	113.989	113.990
Levelling Point	C305-LP101112	04-02-14	Installed	83986.803	36448.742	114.005	26-02-14	114.005	114.005	114.004
Levelling Point	C305-LP101113	04-02-14	Installed	83984.982	36448.637	114.042	26-02-14	114.042	114.043	114.042
Levelling Point	C305-LP101114	04-02-14	Installed	83982.720	36449.105	113.971	26-02-14	113.971	113.970	113.971
Levelling Point	C305-LP101115	04-02-14	Installed	83979.579	36448.809	113.968	26-02-14	113.969	113.968	113.968
Levelling Point	C305-LP101116	04-02-14	Installed	83977.437	36447.962	113.971	26-02-14	113.971	113.971	113.972
Levelling Point	C305-LP101117	04-02-14	Installed	83975.088	36447.587	113.985	26-02-14	113.985	113.985	113.985
Levelling Point	C305-LP101118	04-02-14	Installed	83972.663	36447.478	113.989	26-02-14	113.989	113.989	113.989
Levelling Point	C305-LP101119	04-02-14	Installed	83970.246	36447.226	113.983	26-02-14	113.983	113.982	113.983
Levelling Point	C305-LP101120	04-02-14	Installed	83967.829	36447.053	113.978	26-02-14	113.978	113.978	113.978
Levelling Point	C305-LP101121	04-02-14	Installed	83965.405	36446.890	113.965	26-02-14	113.965	113.965	113.965
Levelling Point	C305-LP101122	04-02-14	Installed	83962.987	36446.696	113.959	26-02-14	113.959	113.960	113.959
Levelling Point	C305-LP101123	04-02-14	Installed	83960.540	36446.500	113.955	26-02-14	113.955	113.955	113.955
Levelling Point	C305-LP101124	04-02-14	Installed	83958.059	36446.265	113.942	26-02-14	113.942	113.942	113.942
Levelling Point	C305-LP101125	04-02-14	Installed	83954.990	36445.987	113.934	26-02-14	113.935	113.935	113.934
Levelling Point	C305-LP101126	04-02-14	Installed	83952.511	36445.814	113.936	26-02-14	113.936	113.936	113.936
Levelling Point	C305-LP101127	12-02-14	Installed	83950.030	36445.560	113.935	26-02-14	113.935	113.936	113.935

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101128	12-02-14	Installed	83947.569	36445.353	113.919	26-02-14	113.919	113.919	113.919
Levelling Point	C305-LP101129	12-02-14	Installed	83945.082	36445.165	113.924	26-02-14	113.924	113.924	113.924
Levelling Point	C305-LP101130	12-02-14	Installed	83942.641	36444.907	113.902	26-02-14	113.902	113.902	113.902
Levelling Point	C305-LP101131	12-02-14	Installed	83939.927	36448.195	114.090	26-02-14	114.090	114.090	114.090
Levelling Point	C305-LP101132	12-02-14	Installed	83937.441	36448.411	114.070	26-02-14	114.070	114.070	114.070
Levelling Point	C305-LP101133	12-02-14	Installed	83934.934	36448.712	114.089	26-02-14	114.090	114.089	114.089
Levelling Point	C305-LP101134	12-02-14	Installed	83932.404	36449.683	114.133	26-02-14	114.133	114.133	114.133
Levelling Point	C305-LP101135	12-02-14	Installed	83929.930	36449.618	114.132	26-02-14	114.132	114.132	114.132
Levelling Point	C305-LP101136	12-02-14	Installed	83927.407	36450.098	114.146	26-02-14	114.146	114.146	114.146
Levelling Point	C305-LP101137	12-02-14	Installed	83924.933	36450.384	114.148	26-02-14	114.148	114.147	114.148
Levelling Point	C305-LP101138	12-02-14	Installed	83922.459	36450.570	114.141	26-02-14	114.141	114.141	114.141
Levelling Point	C305-LP101139	12-02-14	Installed	83919.962	36450.839	114.134	26-02-14	114.134	114.134	114.134
Levelling Point	C305-LP101140	12-02-14	Installed	83917.460	36451.307	114.137	26-02-14	114.137	114.138	114.138
Levelling Point	C305-LP101141	12-02-14	Installed	83914.971	36451.553	114.144	26-02-14	114.143	114.144	114.144
Levelling Point	C305-LP101142	12-02-14	Installed	83910.056	36451.227	114.150	26-02-14	114.150	114.150	114.150
Levelling Point	C305-LP101143	12-02-14	Installed	83905.137	36450.759	114.152	26-02-14	114.151	114.152	114.152
Levelling Point	C305-LP101144	12-02-14	Installed	83900.215	36450.351	114.168	26-02-14	114.168	114.168	114.168
Levelling Point	C305-LP101145	12-02-14	Installed	83894.678	36449.980	114.297	26-02-14	114.297	114.297	114.297
Levelling Point	C305-LP101146	12-02-14	Installed	83890.090	36449.815	114.313	26-02-14	114.312	114.313	114.313
Levelling Point	C305-LP101147	12-02-14	Installed	83885.086	36449.307	114.309	26-02-14	114.309	114.309	114.309
Levelling Point	C305-LP101148	12-02-14	Installed	83879.917	36449.114	114.350	26-02-14	114.350	114.350	114.350
Levelling Point	C305-LP101149	12-02-14	Installed	83874.994	36448.723	114.357	26-02-14	114.357	114.357	114.357
Levelling Point	C305-LP101150	12-02-14	Installed	83870.069	36448.220	114.363	26-02-14	114.363	114.363	114.363
Levelling Point	C305-LP101151	12-02-14	Installed	83865.156	36447.890	114.412	26-02-14	114.412	114.412	114.412
Levelling Point	C305-LP101152	12-02-14	Installed	83860.241	36447.294	114.415	26-02-14	114.415	114.415	114.415
Levelling Point	C305-LP101201	05-02-14	Installed	83919.764	36359.903	113.024	06-03-14	113.024	113.025	113.024
Levelling Point	C305-LP101202	05-02-14	Installed	83919.587	36364.929	113.072	06-03-14	113.072	113.072	113.072
Levelling Point	C305-LP101203	05-02-14	Installed	83919.390	36370.023	113.130	06-03-14	113.130	113.130	113.130

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101204	05-02-14	Installed	83919.588	36374.974	113.197	06-03-14	113.197	113.198	113.198
Levelling Point	C305-LP101205	05-02-14	Installed	83920.635	36381.357	113.243	06-03-14	113.243	113.243	113.243
Levelling Point	C305-LP101206	05-02-14	Installed	83918.950	36385.017	113.174	06-03-14	113.174	113.175	113.175
Levelling Point	C305-LP101207	05-02-14	Installed	83919.397	36389.995	113.269	06-03-14	113.268	113.268	113.268
Levelling Point	C305-LP101208	05-02-14	Installed	83920.049	36394.995	113.358	06-03-14	113.358	113.358	113.358
Levelling Point	C305-LP101209	05-02-14	Installed	83920.724	36399.965	113.455	06-03-14	113.456	113.456	113.455
Levelling Point	C305-LP101210	05-02-14	Installed	83921.380	36404.911	113.517	06-03-14	113.516	113.517	113.517
Levelling Point	C305-LP101211	05-02-14	Installed	83922.001	36409.863	113.583	06-03-14	113.583	113.583	113.583
Levelling Point	C305-LP101212	05-02-14	Installed	83922.668	36414.801	113.688	06-03-14	113.688	113.688	113.688
Levelling Point	C305-LP101213	05-02-14	Installed	83923.327	36419.741	113.731	06-03-14	113.731	113.730	113.731
Levelling Point	C305-LP101214	05-02-14	Installed	83923.979	36424.735	113.758	06-03-14	113.758	113.758	113.758
Levelling Point	C305-LP101215	05-02-14	Installed	83924.724	36429.712	113.720	06-03-14	113.720	113.720	113.720
Levelling Point	C305-LP101301	07-02-14	Installed	83904.665	36348.402	113.048	06-03-14	113.047	113.047	113.047
Levelling Point	C305-LP101302	07-02-14	Installed	83899.814	36347.675	112.897	06-03-14	112.897	112.898	112.897
Levelling Point	C305-LP101303	07-02-14	Installed	83895.028	36346.246	113.079	06-03-14	113.078	113.079	113.078
Levelling Point	C305-LP101304	07-02-14	Installed	83890.217	36345.185	113.115	06-03-14	113.115	113.115	113.115
Levelling Point	C305-LP101305	07-02-14	Installed	83885.179	36343.933	113.167	06-03-14	113.167	113.167	113.166
Levelling Point	C305-LP101306	07-02-14	Installed	83880.285	36342.997	113.203	06-03-14	113.203	113.203	113.203
Levelling Point	C305-LP101307	06-03-15	Installed	83875.484	36341.988	113.105	06-03-14	113.213	113.213	113.213
Levelling Point	C305-LP101308	06-03-15	Installed	83870.735	36341.253	113.271	06-03-14	113.276	113.276	113.276
Levelling Point	C305-LP101309	07-02-14	Installed	83865.568	36340.737	113.379	06-03-14	113.379	113.379	113.379
Levelling Point	C305-LP101310	07-02-14	Installed	83860.596	36339.940	113.422	06-03-14	113.421	113.422	113.421
Levelling Point	C305-LP101311	07-02-14	Installed	83855.721	36339.152	113.470	06-03-14	113.470	113.470	113.470
Levelling Point	C305-LP101312	07-02-14	Installed	83851.236	36338.466	113.515	06-03-14	113.515	113.515	113.515
Levelling Point	C305-LP101313	07-02-14	Installed	83845.708	36337.687	113.573	06-03-14	113.573	113.573	113.573
Levelling Point	C305-LP101314	07-02-14	Installed	83843.326	36337.370	113.601	06-03-14	113.600	113.601	113.601
Levelling Point	C305-LP101315	07-02-14	Installed	83840.727	36337.025	113.623	06-03-14	113.623	113.623	113.623
Levelling Point	C305-LP101316	07-02-14	Installed	83838.306	36336.651	113.603	06-03-14	113.602	113.603	113.603

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101317	07-02-14	Installed	83836.006	36336.291	113.578	06-03-14	113.578	113.579	113.578
Levelling Point	C305-LP101318	07-02-14	Installed	83833.528	36335.888	113.555	06-03-14	113.555	113.555	113.555
Levelling Point	C305-LP101319	07-02-14	Installed	83830.344	36335.477	113.526	06-03-14	113.526	113.526	113.526
Levelling Point	C305-LP101320	07-02-14	Installed	83828.201	36335.087	113.501	06-03-14	113.501	113.501	113.501
Levelling Point	C305-LP101321	07-02-14	Installed	83826.421	36334.805	113.484	06-03-14	113.484	113.484	113.484
Levelling Point	C305-LP101322	07-02-14	Installed	83823.693	36334.373	113.456	06-03-14	113.456	113.456	113.456
Levelling Point	C305-LP101323	07-02-14	Installed	83821.018	36333.932	113.426	06-03-14	113.426	113.426	113.425
Levelling Point	C305-LP101324	07-02-14	Installed	83815.051	36330.347	113.523	06-03-14	113.523	113.523	113.523
Levelling Point	C305-LP101325	07-02-14	Installed	83812.530	36330.440	113.589	06-03-14	113.589	113.589	113.589
Levelling Point	C305-LP101326	07-02-14	Installed	83810.014	36330.466	113.672	06-03-14	113.672	113.672	113.673
Levelling Point	C305-LP101327	07-02-14	Installed	83807.541	36330.433	113.668	06-03-14	113.668	113.668	113.668
Levelling Point	C305-LP101328	06-03-15	Installed	83805.076	36330.452	113.658	06-03-14	113.674	113.673	113.673
Levelling Point	C305-LP101329	07-02-14	Installed	83802.551	36330.464	113.709	06-03-14	113.709	113.709	113.708
Levelling Point	C305-LP101330	07-02-14	Installed	83800.094	36330.529	113.728	06-03-14	113.727	113.727	113.728
Levelling Point	C305-LP101331	07-02-14	Installed	83797.615	36330.556	113.768	06-03-14	113.767	113.767	113.768
Levelling Point	C305-LP101332	07-02-14	Installed	83795.071	36330.642	113.815	06-03-14	113.815	113.814	113.814
Levelling Point	C305-LP101333	07-02-14	Installed	83792.576	36330.707	113.860	06-03-14	113.860	113.859	113.859
Levelling Point	C305-LP101334	07-02-14	Installed	83790.088	36330.729	113.884	06-03-14	113.884	113.884	113.884
Levelling Point	C305-LP101335	07-02-14	Installed	83787.442	36330.807	113.897	06-03-14	113.897	113.896	113.897
Levelling Point	C305-LP101336	07-02-14	Installed	83784.927	36330.869	113.934	06-03-14	113.934	113.934	113.934
Levelling Point	C305-LP101337	07-02-14	Installed	83782.379	36330.866	113.966	06-03-14	113.966	113.966	113.966
Levelling Point	C305-LP101338	07-02-14	Installed	83779.870	36330.956	113.982	06-03-14	113.981	113.981	113.982
Levelling Point	C305-LP101339	07-02-14	Installed	83777.458	36331.136	113.997	06-03-14	113.997	113.997	113.996
Levelling Point	C305-LP101340	07-02-14	Installed	83774.930	36331.348	114.015	06-03-14	114.015	114.015	114.015
Levelling Point	C305-LP101341	06-03-15	Installed	83772.390	36331.596	113.995	06-03-14	114.005	114.005	114.004
Levelling Point	C305-LP101342	06-03-15	Installed	83769.941	36331.807	114.011	06-03-14	114.018	114.018	114.018
Levelling Point	C305-LP101343	06-03-15	Installed	83767.447	36332.152	114.014	06-03-14	114.020	114.020	114.020
Levelling Point	C305-LP101344	06-03-15	Installed	83764.961	36332.379	113.986	06-03-14	114.000	114.000	114.001

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101345	06-03-15	Installed	83762.500	36332.668	113.992	06-03-14	114.005	114.005	114.006
Levelling Point	C305-LP101346	07-02-14	Installed	83760.361	36332.877	113.990	06-03-14	113.990	113.990	113.990
Levelling Point	C305-LP101347	07-02-14	Installed	83757.505	36333.335	113.916	06-03-14	113.916	113.916	113.916
Levelling Point	C305-LP101348	07-02-14	Installed	83757.849	36336.272	114.000	06-03-14	114.000	114.000	114.000
Levelling Point	C305-LP101349	07-02-14	Installed	83752.733	36336.759	113.978	06-03-14	113.979	113.978	113.978
Levelling Point	C305-LP101350	07-02-14	Installed	83747.324	36336.471	113.961	06-03-14	113.961	113.961	113.961
Levelling Point	C305-LP101351	07-02-14	Installed	83742.307	36337.470	113.999	06-03-14	113.999	113.999	113.999
Levelling Point	C305-LP101352	07-02-14	Installed	83737.478	36338.262	113.981	06-03-14	113.981	113.981	113.981
Levelling Point	C305-LP101353	07-02-14	Installed	83732.516	36339.411	113.959	06-03-14	113.959	113.959	113.959
Levelling Point	C305-LP101354	07-02-14	Installed	83727.660	36340.265	113.915	06-03-14	113.914	113.915	113.915
Levelling Point	C305-LP101355	07-02-14	Installed	83722.790	36341.026	113.884	06-03-14	113.884	113.884	113.884
Levelling Point	C305-LP101401	05-02-14	Installed	83868.275	36344.767	113.324	06-03-14	113.324	113.324	113.324
Levelling Point	C305-LP101402	05-02-14	Installed	83864.699	36348.787	113.399	06-03-14	113.398	113.398	113.399
Levelling Point	C305-LP101403	05-02-14	Installed	83861.067	36352.772	113.467	06-03-14	113.468	113.467	113.467
Levelling Point	C305-LP101404	05-02-14	Installed	83859.707	36354.519	113.486	06-03-14	113.486	113.486	113.486
Levelling Point	C305-LP101405	05-02-14	Installed	83858.123	36356.282	113.500	06-03-14	113.500	113.500	113.500
Levelling Point	C305-LP101406	05-02-14	Installed	83856.371	36358.208	113.521	06-03-14	113.521	113.521	113.521
Levelling Point	C305-LP101407	05-02-14	Installed	83854.614	36359.863	113.557	06-03-14	113.557	113.557	113.557
Levelling Point	C305-LP101408	05-02-14	Installed	83853.339	36361.685	113.535	06-03-14	113.535	113.535	113.535
Levelling Point	C305-LP101409	05-02-14	Installed	83851.507	36363.509	113.556	06-03-14	113.556	113.556	113.556
Levelling Point	C305-LP101410	05-02-14	Installed	83849.808	36365.550	113.595	06-03-14	113.595	113.594	113.595
Levelling Point	C305-LP101411	05-02-14	Installed	83848.093	36367.475	113.635	06-03-14	113.635	113.635	113.635
Levelling Point	C305-LP101412	05-02-14	Installed	83846.358	36369.326	113.676	06-03-14	113.676	113.675	113.676
Levelling Point	C305-LP101413	05-02-14	Installed	83844.722	36371.072	113.704	06-03-14	113.704	113.704	113.705
Levelling Point	C305-LP101414	05-02-14	Installed	83843.065	36373.029	113.713	06-03-14	113.713	113.713	113.713
Levelling Point	C305-LP101415	05-02-14	Installed	83841.398	36374.886	113.734	06-03-14	113.734	113.734	113.735
Levelling Point	C305-LP101416	05-02-14	Installed	83839.486	36376.847	113.749	06-03-14	113.749	113.749	113.749
Levelling Point	C305-LP101417	05-02-14	Installed	83838.025	36378.598	113.779	06-03-14	113.779	113.779	113.779

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101418	05-02-14	Installed	83836.317	36380.486	113.804	06-03-14	113.804	113.804	113.804
Levelling Point	C305-LP101419	05-02-14	Installed	83834.735	36382.224	113.836	06-03-14	113.836	113.836	113.836
Levelling Point	C305-LP101420	05-02-14	Installed	83832.944	36383.923	113.877	06-03-14	113.877	113.878	113.878
Levelling Point	C305-LP101421	05-02-14	Installed	83830.373	36383.924	113.901	06-03-14	113.901	113.900	113.901
Levelling Point	C305-LP101422	05-02-14	Installed	83827.833	36383.452	113.928	06-03-14	113.928	113.928	113.928
Levelling Point	C305-LP101423	05-02-14	Installed	83825.488	36382.992	113.941	06-03-14	113.941	113.941	113.941
Levelling Point	C305-LP101424	05-02-14	Installed	83833.151	36393.549	113.985	06-03-14	113.985	113.984	113.985
Levelling Point	C305-LP101425	05-02-14	Installed	83833.400	36398.632	114.039	06-03-14	114.039	114.038	114.039
Levelling Point	C305-LP101426	05-02-14	Installed	83833.761	36403.499	114.060	06-03-14	114.060	114.059	114.060
Levelling Point	C305-LP101427	05-02-14	Installed	83833.800	36408.580	114.116	06-03-14	114.116	114.117	114.116
Levelling Point	C305-LP101428	05-02-14	Installed	83834.036	36413.616	114.224	06-03-14	114.223	114.224	114.223
Levelling Point	C305-LP101429	05-02-14	Installed	83834.179	36418.478	114.319	06-03-14	114.319	114.319	114.319
Levelling Point	C305-LP101430	05-02-14	Installed	83834.417	36423.671	114.437	06-03-14	114.437	114.437	114.437
Levelling Point	C305-LP101501	05-02-14	Installed	83829.955	36290.990	113.287	06-03-14	113.287	113.287	113.287
Levelling Point	C305-LP101502	05-02-14	Installed	83828.370	36295.838	113.262	06-03-14	113.263	113.262	113.262
Levelling Point	C305-LP101503	07-02-14	Installed	83827.056	36300.637	113.270	06-03-14	113.270	113.270	113.270
Levelling Point	C305-LP101504	07-02-14	Installed	83825.424	36305.391	113.323	06-03-14	113.323	113.322	113.322
Levelling Point	C305-LP101505	07-02-14	Installed	83823.881	36310.074	113.353	06-03-14	113.353	113.352	113.352
Levelling Point	C305-LP101506	07-02-14	Installed	83822.345	36314.796	113.352	06-03-14	113.352	113.352	113.352
Levelling Point	C305-LP101507	07-02-14	Installed	83820.776	36319.590	113.383	06-03-14	113.383	113.384	113.383
Levelling Point	C305-LP101508	07-02-14	Installed	83819.248	36324.349	113.407	06-03-14	113.407	113.407	113.407
Levelling Point	C305-LP101509	07-02-14	Installed	83817.373	36329.619	113.470	06-03-14	113.470	113.470	113.470
Levelling Point	C305-LP101510	07-02-14	Installed	83814.153	36335.565	113.610	06-03-14	113.611	113.610	113.610
Levelling Point	C305-LP101511	07-02-14	Installed	83810.959	36339.443	113.680	06-03-14	113.680	113.680	113.680
Levelling Point	C305-LP101512	07-02-14	Installed	83807.795	36343.278	113.757	06-03-14	113.757	113.757	113.757
Levelling Point	C305-LP101513	07-02-14	Installed	83804.697	36347.186	113.851	06-03-14	113.851	113.852	113.851
Levelling Point	C305-LP101514	07-02-14	Installed	83801.744	36351.341	113.933	06-03-14	113.932	113.933	113.933
Levelling Point	C305-LP101515	07-02-14	Installed	83799.353	36355.186	113.954	06-03-14	113.954	113.954	113.953

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101516	07-02-14	Installed	83796.716	36359.801	114.033	06-03-14	114.033	114.033	114.033
Levelling Point	C305-LP101517	07-02-14	Installed	83794.479	36363.781	114.084	06-03-14	114.084	114.085	114.084
Levelling Point	C305-LP101518	07-02-14	Installed	83792.196	36367.798	114.122	06-03-14	114.122	114.122	114.122
Levelling Point	C305-LP101519	07-02-14	Installed	83789.949	36371.806	114.188	06-03-14	114.188	114.188	114.188
Levelling Point	C305-LP101520	07-02-14	Installed	83787.453	36375.492	114.182	06-03-14	114.182	114.182	114.182
Levelling Point	C305-LP101601	07-02-14	Installed	83826.310	36281.161	113.520	06-03-14	113.520	113.520	113.520
Levelling Point	C305-LP101602	07-02-14	Installed	83822.615	36283.765	113.551	06-03-14	113.550	113.551	113.550
Levelling Point	C305-LP101603	07-02-14	Installed	83818.539	36286.540	113.585	06-03-14	113.585	113.586	113.585
Levelling Point	C305-LP101604	07-02-14	Installed	83814.221	36289.451	113.592	06-03-14	113.593	113.593	113.593
Levelling Point	C305-LP101605	07-02-14	Installed	83810.058	36292.174	113.634	06-03-14	113.634	113.633	113.633
Levelling Point	C305-LP101606	07-02-14	Installed	83805.920	36294.850	113.669	06-03-14	113.669	113.669	113.669
Levelling Point	C305-LP101607	07-02-14	Installed	83801.672	36297.698	113.691	06-03-14	113.691	113.691	113.691
Levelling Point	C305-LP101608	07-02-14	Installed	83797.461	36300.535	113.719	06-03-14	113.719	113.719	113.719
Levelling Point	C305-LP101609	07-02-14	Installed	83793.260	36303.348	113.743	06-03-14	113.742	113.742	113.743
Levelling Point	C305-LP101610	07-02-14	Installed	83789.038	36306.228	113.771	06-03-14	113.771	113.771	113.771
Levelling Point	C305-LP101611	07-02-14	Installed	83785.038	36308.942	113.797	06-03-14	113.797	113.797	113.797
Levelling Point	C305-LP101612	07-02-14	Installed	83780.892	36311.681	113.821	06-03-14	113.821	113.821	113.821
Levelling Point	C305-LP101613	07-02-14	Installed	83776.776	36314.405	113.848	06-03-14	113.847	113.848	113.848
Levelling Point	C305-LP101614	07-02-14	Installed	83772.696	36317.235	113.859	06-03-14	113.859	113.860	113.859
Levelling Point	C305-LP101615	07-02-14	Installed	83768.551	36320.029	113.850	06-03-14	113.850	113.850	113.850
Levelling Point	C305-LP101616	07-02-14	Installed	83764.041	36323.043	113.870	06-03-14	113.870	113.870	113.870
Levelling Point	C305-LP101617	07-02-14	Installed	83760.059	36325.582	113.891	06-03-14	113.890	113.891	113.891
Levelling Point	C305-LP101618	07-02-14	Installed	83755.857	36328.400	113.939	06-03-14	113.939	113.939	113.939
Levelling Point	C305-LP101701	07-02-14	Installed	83733.417	36216.507	115.710	07-05-14	115.710	115.710	115.709
Levelling Point	C305-LP101702	07-02-14	Installed	83729.323	36218.591	115.649	07-05-14	115.650	115.649	115.649
Levelling Point	C305-LP101703	07-02-14	Installed	83724.771	36220.837	115.599	07-05-14	115.599	115.599	115.599
Levelling Point	C305-LP101704	07-02-14	Installed	83720.067	36223.517	115.575	07-05-14	115.575	115.574	115.575
Levelling Point	C305-LP101705	07-02-14	Installed	83715.918	36226.161	115.548	07-05-14	115.547	115.547	115.548

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101706	07-02-14	Installed	83711.798	36228.430	115.526	07-05-14	115.526	115.526	115.526
Levelling Point	C305-LP101707	07-02-14	Installed	83707.599	36230.747	115.501	07-05-14	115.501	115.501	115.501
Levelling Point	C305-LP101708	07-02-14	Installed	83705.096	36232.126	115.478	07-05-14	115.478	115.477	115.477
Levelling Point	C305-LP101709	07-02-14	Installed	83703.270	36233.183	115.445	07-05-14	115.445	115.446	115.445
Levelling Point	C305-LP101710	07-02-14	Installed	83701.006	36234.379	115.418	07-05-14	115.417	115.418	115.418
Levelling Point	C305-LP101711	07-02-14	Installed	83698.890	36235.572	115.400	07-05-14	115.400	115.400	115.400
Levelling Point	C305-LP101712	07-02-14	Installed	83696.689	36236.788	115.372	07-05-14	115.372	115.372	115.372
Levelling Point	C305-LP101713	07-02-14	Installed	83694.415	36238.058	115.338	07-05-14	115.338	115.338	115.338
Levelling Point	C305-LP101714	07-02-14	Installed	83692.288	36239.228	115.316	07-05-14	115.316	115.316	115.316
Levelling Point	C305-LP101715	07-02-14	Installed	83690.166	36240.403	115.295	07-05-14	115.295	115.295	115.295
Levelling Point	C305-LP101716	07-02-14	Installed	83687.949	36241.637	115.266	07-05-14	115.266	115.266	115.266
Levelling Point	C305-LP101717	07-02-14	Installed	83685.828	36242.751	115.230	07-05-14	115.231	115.230	115.230
Levelling Point	C305-LP101718	07-02-14	Installed	83683.533	36244.189	115.196	07-05-14	115.196	115.196	115.196
Levelling Point	C305-LP101719	07-02-14	Installed	83681.380	36245.279	115.155	07-05-14	115.155	115.155	115.155
Levelling Point	C305-LP101720	07-02-14	Installed	83679.203	36246.582	115.114	07-05-14	115.114	115.114	115.114
Levelling Point	C305-LP101721	07-02-14	Installed	83677.034	36247.666	115.069	07-05-14	115.069	115.069	115.069
Levelling Point	C305-LP101722	07-02-14	Installed	83674.867	36248.916	115.033	07-05-14	115.033	115.034	115.034
Levelling Point	C305-LP101723	07-02-14	Installed	83672.466	36250.205	114.996	07-05-14	114.996	114.996	114.996
Levelling Point	C305-LP101724	07-02-14	Installed	83670.237	36251.520	114.965	07-05-14	114.965	114.965	114.965
Levelling Point	C305-LP101725	07-02-14	Installed	83668.130	36252.769	114.916	07-05-14	114.916	114.916	114.916
Levelling Point	C305-LP101726	07-02-14	Installed	83666.379	36253.798	114.878	07-05-14	114.878	114.878	114.878
Levelling Point	C305-LP101727	07-02-14	Installed	83663.936	36255.334	114.820	07-05-14	114.819	114.820	114.820
Levelling Point	C305-LP101728	07-02-14	Installed	83661.984	36256.626	114.766	07-05-14	114.765	114.766	114.766
Levelling Point	C305-LP101729	07-02-14	Installed	83659.773	36258.010	114.722	07-05-14	114.722	114.721	114.722
Levelling Point	C305-LP101730	07-02-14	Installed	83658.025	36259.055	114.687	07-05-14	114.686	114.686	114.686
Levelling Point	C305-LP101731	07-02-14	Installed	83655.454	36260.657	114.640	07-05-14	114.640	114.639	114.640
Levelling Point	C305-LP101732	07-02-14	Installed	83652.922	36262.370	114.607	07-05-14	114.607	114.607	114.607
Levelling Point	C305-LP101733	07-02-14	Installed	83651.233	36263.509	114.568	07-05-14	114.567	114.567	114.568

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101734	07-02-14	Installed	83649.101	36264.815	114.529	07-05-14	114.529	114.529	114.529
Levelling Point	C305-LP101735	07-02-14	Installed	83646.991	36266.107	114.477	07-05-14	114.477	114.477	114.478
Levelling Point	C305-LP101736	07-02-14	Installed	83642.609	36269.104	114.381	07-05-14	114.381	114.381	114.381
Levelling Point	C305-LP101737	14-06-14	Installed	83641.837	36274.044	114.340	07-05-14	114.339	114.339	114.340
Levelling Point	C305-LP101738	14-06-14	Installed	83644.458	36278.302	114.281	07-05-14	114.281	114.281	114.281
Levelling Point	C305-LP101739	14-06-14	Installed	83647.113	36282.539	114.227	07-05-14	114.226	114.226	114.227
Levelling Point	C305-LP101740	14-06-14	Installed	83649.876	36286.706	114.249	07-05-14	114.249	114.249	114.248
Levelling Point	C305-LP101741	14-06-14	Installed	83652.767	36290.785	114.231	07-05-14	114.232	114.231	114.231
Levelling Point	C305-LP101742	14-06-14	Installed	83656.565	36294.037	114.212	07-05-14	114.212	114.212	114.212
Levelling Point	C305-LP101743	14-06-14	Installed	83659.014	36298.396	114.202	07-05-14	114.202	114.202	114.202
Levelling Point	C305-LP101744	14-06-14	Installed	83661.711	36302.592	114.114	07-05-14	114.114	114.114	114.114
Levelling Point	C305-LP101745	14-06-14	Installed	83665.050	36306.312	113.995	07-05-14	113.995	113.995	113.995
Levelling Point	C305-LP101746	14-06-14	Installed	83668.448	36309.985	113.945	07-05-14	113.945	113.945	113.945
Levelling Point	C305-LP101747	14-06-14	Installed	83671.846	36313.658	113.909	07-05-14	113.909	113.910	113.909
Levelling Point	C305-LP101801	07-02-14	Installed	83688.087	36177.840	116.375	08-05-14	116.375	116.376	116.375
Levelling Point	C305-LP101802	07-02-14	Installed	83683.054	36180.031	116.365	08-05-14	116.365	116.365	116.365
Levelling Point	C305-LP101803	07-02-14	Installed	83678.101	36182.398	116.290	08-05-14	116.290	116.289	116.290
Levelling Point	C305-LP101804	07-02-14	Installed	83673.115	36184.696	116.215	08-05-14	116.215	116.215	116.215
Levelling Point	C305-LP101805	07-02-14	Installed	83668.140	36187.016	116.127	08-05-14	116.127	116.127	116.128
Levelling Point	C305-LP101806	07-02-14	Installed	83663.902	36188.982	116.043	08-05-14	116.043	116.043	116.043
Levelling Point	C305-LP101807	07-02-14	Installed	83659.663	36190.955	115.959	08-05-14	115.959	115.959	115.959
Levelling Point	C305-LP101808	07-02-14	Installed	83654.446	36193.403	115.870	08-05-14	115.870	115.870	115.871
Levelling Point	C305-LP101809	07-02-14	Installed	83649.957	36195.472	115.795	08-05-14	115.795	115.794	115.795
Levelling Point	C305-LP101810	07-02-14	Installed	83645.516	36197.542	115.738	08-05-14	115.738	115.738	115.738
Levelling Point	C305-LP101811	07-02-14	Installed	83643.294	36198.566	115.706	08-05-14	115.705	115.705	115.706
Levelling Point	C305-LP101812	07-02-14	Installed	83641.059	36199.599	115.669	08-05-14	115.669	115.669	115.669
Levelling Point	C305-LP101813	07-02-14	Installed	83638.825	36200.617	115.634	08-05-14	115.634	115.634	115.634
Levelling Point	C305-LP101814	07-02-14	Installed	83636.414	36201.751	115.597	08-05-14	115.597	115.597	115.598

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commissioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101815	07-02-14	Installed	83634.198	36202.773	115.565	08-05-14	115.565	115.564	115.565
Levelling Point	C305-LP101816	07-02-14	Installed	83631.787	36203.896	115.516	08-05-14	115.516	115.515	115.516
Levelling Point	C305-LP101817	07-02-14	Installed	83629.548	36204.935	115.478	08-05-14	115.478	115.478	115.478
Levelling Point	C305-LP101818	07-02-14	Installed	83627.326	36205.976	115.449	08-05-14	115.449	115.448	115.449
Levelling Point	C305-LP101819	07-02-14	Installed	83625.110	36207.002	115.409	08-05-14	115.409	115.409	115.409
Levelling Point	C305-LP101820	07-02-14	Installed	83622.888	36208.034	115.365	08-05-14	115.365	115.365	115.365
Levelling Point	C305-LP101821	07-02-14	Installed	83620.722	36209.204	115.338	08-05-14	115.338	115.337	115.337
Levelling Point	C305-LP101822	07-02-14	Installed	83618.307	36210.313	115.301	08-05-14	115.300	115.301	115.300
Levelling Point	C305-LP101823	07-02-14	Installed	83616.070	36211.358	115.261	08-05-14	115.261	115.260	115.261
Levelling Point	C305-LP101824	07-02-14	Installed	83613.648	36212.477	115.209	08-05-14	115.209	115.209	115.209
Levelling Point	C305-LP101825	07-02-14	Installed	83609.266	36214.694	115.142	08-05-14	115.142	115.142	115.142
Levelling Point	C305-LP101826	07-02-14	Installed	83610.999	36219.290	113.623	08-05-14	113.623	113.623	113.623
Levelling Point	C305-LP101827	07-02-14	Installed	83613.190	36223.687	113.523	08-05-14	113.523	113.523	113.523
Levelling Point	C305-LP101901	14-06-14	Installed	83546.125	36126.245	115.449	14-06-14	113.979	113.979	113.978
Levelling Point	C305-LP101902	14-06-14	Installed	83549.290	36130.116	115.502	14-06-14	114.032	114.032	114.033
Levelling Point	C305-LP101903	14-06-14	Installed	83551.623	36134.538	115.465	14-06-14	113.995	113.996	113.995
Levelling Point	C305-LP101904	14-06-14	Installed	83554.383	36138.712	115.562	14-06-14	114.093	114.092	114.093
Levelling Point	C305-LP101905	14-06-14	Installed	83557.133	36142.888	115.546	14-06-14	114.077	114.076	114.076
Levelling Point	C305-LP101906	14-06-14	Installed	83559.269	36147.408	115.575	14-06-14	114.105	114.105	114.105
Levelling Point	C305-LP101907	14-06-14	Installed	83561.355	36151.953	115.602	14-06-14	114.132	114.132	114.132
Levelling Point	C305-LP101908	14-06-14	Installed	83563.550	36156.446	115.631	14-06-14	114.161	114.161	114.161
Levelling Point	C305-LP101909	14-06-14	Installed	83565.693	36160.963	115.649	14-06-14	114.179	114.179	114.179
Levelling Point	C305-LP101910	14-06-14	Installed	83567.849	36165.475	115.679	14-06-14	114.209	114.209	114.209
Levelling Point	C305-LP101911	14-06-14	Installed	83568.925	36167.731	115.700	14-06-14	114.230	114.231	114.230
Levelling Point	C305-LP101912	14-06-14	Installed	83569.971	36170.002	115.711	14-06-14	114.241	114.241	114.241
Levelling Point	C305-LP101913	14-06-14	Installed	83571.016	36172.273	115.727	14-06-14	114.257	114.257	114.257
Levelling Point	C305-LP101914	14-06-14	Installed	83572.062	36174.544	115.709	14-06-14	114.239	114.239	114.239
Levelling Point	C305-LP101915	14-06-14	Installed	83573.079	36176.827	115.695	14-06-14	114.225	114.225	114.225

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101916	14-06-14	Installed	83574.061	36179.127	115.685	14-06-14	114.215	114.214	114.215
Levelling Point	C305-LP101917	14-06-14	Installed	83574.098	36181.636	115.663	14-06-14	114.194	114.194	114.194
Levelling Point	C305-LP101918	14-06-14	Installed	83577.107	36185.630	115.592	14-06-14	114.122	114.123	114.123
Levelling Point	C305-LP101919	14-06-14	Installed	83578.053	36187.944	115.555	14-06-14	114.085	114.085	114.085
Levelling Point	C305-LP101920	14-06-14	Installed	83579.077	36190.224	115.520	14-06-14	114.050	114.050	114.050
Levelling Point	C305-LP101921	14-06-14	Installed	83580.125	36192.494	115.495	14-06-14	114.026	114.026	114.025
Levelling Point	C305-LP101922	14-06-14	Installed	83581.323	36194.791	115.467	14-06-14	113.997	113.997	113.997
Levelling Point	C305-LP101923	14-06-14	Installed	83582.392	36197.051	115.446	14-06-14	113.976	113.976	113.976
Levelling Point	C305-LP101924	14-06-14	Installed	83583.395	36199.341	115.416	14-06-14	113.945	113.945	113.946
Levelling Point	C305-LP101925	14-06-14	Installed	83584.780	36201.400	115.373	14-06-14	113.902	113.903	113.903
Levelling Point	C305-LP101926	14-06-14	Installed	83585.800	36203.703	115.390	14-06-14	115.390	115.390	115.390
Levelling Point	C305-LP101927	16-08-14	Installed	83591.815	36210.558	115.433	14-06-14	115.432	115.433	115.432
Levelling Point	C305-LP101928	16-08-14	Installed	83594.095	36215.008	115.241	14-06-14	115.242	115.241	115.242
Levelling Point	C305-LP101929	16-08-14	Installed	83596.329	36219.369	115.199	14-06-14	115.199	115.200	115.199
Levelling Point	C305-LP101930	16-08-14	Installed	83598.541	36223.685	115.094	14-06-14	115.094	115.094	115.094
Levelling Point	C305-LP101931	16-08-14	Installed	83599.384	36225.332	115.055	14-06-14	115.055	115.055	115.055
Levelling Point	C305-LP101932	16-08-14	Installed	83600.228	36226.978	115.020	14-06-14	115.019	115.020	115.020
Levelling Point	C305-LP101933	16-08-14	Installed	83601.071	36228.625	114.983	14-06-14	114.982	114.982	114.982
Levelling Point	C305-LP101934	16-08-14	Installed	83601.983	36230.405	114.948	14-06-14	114.948	114.948	114.948
Levelling Point	C305-LP101935	16-08-14	Installed	83602.850	36232.096	114.937	14-06-14	114.937	114.937	114.937
Levelling Point	C305-LP101936	16-08-14	Installed	83603.693	36233.742	114.918	14-06-14	114.918	114.918	114.918
Levelling Point	C305-LP101937	16-08-14	Installed	83604.537	36235.389	114.897	14-06-14	114.897	114.897	114.897
Levelling Point	C305-LP101938	16-08-14	Installed	83605.380	36237.035	114.876	14-06-14	114.877	114.876	114.877
Levelling Point	C305-LP101939	16-08-14	Installed	83606.224	36238.682	114.859	14-06-14	114.859	114.859	114.859
Levelling Point	C305-LP101940	16-08-14	Installed	83607.067	36240.328	114.838	14-06-14	114.838	114.838	114.838
Levelling Point	C305-LP101941	16-08-14	Installed	83608.093	36242.331	114.815	14-06-14	114.814	114.814	114.815
Levelling Point	C305-LP101942	16-08-14	Installed	83609.096	36244.289	114.801	14-06-14	114.802	114.802	114.801
Levelling Point	C305-LP101943	16-08-14	Installed	83610.122	36246.291	114.783	14-06-14	114.784	114.783	114.783

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP101944	16-08-14	Installed	83611.125	36248.250	114.766	14-06-14	114.765	114.766	114.765
Levelling Point	C305-LP101945	16-08-14	Installed	83613.519	36252.922	114.721	14-06-14	114.721	114.721	114.721
Levelling Point	C305-LP101946	16-08-14	Installed	83615.911	36257.483	114.680	14-06-14	114.680	114.680	114.680
Levelling Point	C305-LP101947	16-08-14	Installed	83618.306	36262.155	114.655	14-06-14	114.655	114.655	114.655
Levelling Point	C305-LP101948	16-08-14	Installed	83620.937	36266.698	114.601	14-06-14	114.601	114.602	114.601
Levelling Point	C305-LP101949	16-08-14	Installed	83623.790	36271.280	114.539	14-06-14	114.539	114.539	114.539
Levelling Point	C305-LP101950	16-08-14	Installed	83626.860	36276.145	114.488	14-06-14	114.488	114.489	114.488
Levelling Point	C305-LP101951	16-08-14	Installed	83629.888	36280.974	114.402	14-06-14	114.402	114.402	114.402
Levelling Point	C305-LP101952	16-08-14	Installed	83632.942	36285.845	114.335	14-06-14	114.335	114.335	114.334
Levelling Point	C305-LP101953	16-08-14	Installed	83636.076	36290.844	114.309	14-06-14	114.309	114.308	114.308
Levelling Point	C305-LP101954	16-08-14	Installed	83639.104	36295.673	114.230	14-06-14	114.230	114.230	114.230
Levelling Point	C305-LP102001	07-02-14	Installed	83545.691	36157.436	115.747	09-05-14	115.748	115.748	115.748
Levelling Point	C305-LP102002	07-02-14	Installed	83536.155	36159.841	115.596	09-05-14	115.597	115.597	115.597
Levelling Point	C305-LP102003	07-02-14	Installed	83526.463	36162.305	115.350	09-05-14	115.430	115.429	115.429
Levelling Point	C305-LP102004	07-02-14	Installed	83516.788	36164.832	115.169	09-05-14	115.169	115.170	115.170
Levelling Point	C305-LP102005	07-02-14	Installed	83507.129	36167.416	114.865	09-05-14	114.866	114.866	114.867
Levelling Point	C305-LP102006	07-02-14	Installed	83497.495	36170.099	114.557	09-05-14	114.557	114.557	114.557
Levelling Point	C305-LP102007	07-02-14	Installed	83488.012	36172.673	114.245	09-05-14	114.245	114.245	114.245
Levelling Point	C305-LP102008	07-02-14	Installed	83478.746	36175.558	113.957	09-05-14	113.958	113.958	113.957
Levelling Point	C305-LP102009	07-02-14	Installed	83468.851	36178.299	113.861	09-05-14	113.862	113.862	113.862
Levelling Point	C305-LP102010	07-02-14	Installed	83459.461	36181.471	113.839	09-05-14	113.839	113.839	113.839
Levelling Point	C305-LP102011	07-02-14	Installed	83449.732	36184.213	113.840	09-05-14	113.839	113.839	113.839
Levelling Point	C305-LP102012	07-02-14	Installed	83440.000	36186.740	113.661	09-05-14	113.661	113.661	113.661
Levelling Point	C305-LP102101	07-02-14	Installed	83544.572	36125.337	115.225	09-05-14	115.226	115.226	115.226
Levelling Point	C305-LP102102	07-02-14	Installed	83534.707	36126.974	115.016	09-05-14	115.016	115.016	115.016
Levelling Point	C305-LP102103	07-02-14	Installed	83524.921	36129.036	114.828	09-05-14	114.828	114.828	114.829
Levelling Point	C305-LP102104	07-02-14	Installed	83515.129	36131.063	114.635	09-05-14	114.635	114.636	114.636
Levelling Point	C305-LP102105	07-02-14	Installed	83505.393	36133.224	114.479	09-05-14	114.480	114.481	114.481

IRS Installation Record Sheets – Levelling Points

Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Levelling Point	C305-LP102106	07-02-14	Installed	83495.534	36135.291	114.406	09-05-14	114.408	114.408	114.407
Levelling Point	C305-LP102107	07-02-14	Installed	83490.664	36136.226	114.298	09-05-14	114.300	114.300	114.300
Levelling Point	C305-LP102108	07-02-14	Installed	83485.788	36137.131	114.225	09-05-14	114.227	114.226	114.226
Levelling Point	C305-LP102109	07-02-14	Installed	83480.927	36138.116	114.135	09-05-14	114.136	114.136	114.135
Levelling Point	C305-LP102110	07-02-14	Installed	83476.067	36139.103	114.037	09-05-14	114.037	114.037	114.038
Levelling Point	C305-LP102111	07-02-14	Installed	83471.207	36140.090	113.965	09-05-14	113.965	113.965	113.965
Levelling Point	C305-LP102112	07-02-14	Installed	83466.346	36141.077	113.878	09-05-14	113.879	113.879	113.879
Levelling Point	C305-LP102113	07-02-14	Installed	83461.486	36142.064	113.794	09-05-14	113.795	113.795	113.795
Levelling Point	C305-LP102114	07-02-14	Installed	83456.626	36143.051	113.721	09-05-14	113.723	113.722	113.721
Levelling Point	C305-LP102115	07-02-14	Installed	83451.763	36144.028	113.633	09-05-14	113.634	113.634	113.634
Levelling Point	C305-LP102116	07-02-14	Installed	83446.909	36145.044	113.542	09-05-14	113.543	113.544	113.543
Levelling Point	C305-LP102117	07-02-14	Installed	83442.045	36146.010	113.481	09-05-14	113.481	113.482	113.482
Levelling Point	C305-LP102118	07-02-14	Installed	83437.185	36147.000	113.399	09-05-14	113.400	113.399	113.399
Levelling Point	C305-LP102119	07-02-14	Installed	83432.323	36147.981	113.195	09-05-14	113.194	113.194	113.194
Levelling Point	C305-LP102402	24-03-14	Installed	83862.823	36381.209	113.694	02-05-14	113.694	113.694	113.694
Levelling Point	C305-LP102403	24-03-14	Installed	83865.175	36398.475	113.855	02-05-14	113.855	113.855	113.855
Levelling Point	C305-LP103101	21-02-15	Installed	83787.106	36295.625	113.685	07-05-14	114.551	114.551	114.551
Levelling Point	C305-LP103102	21-02-15	Installed	83768.432	36300.271	113.855	07-05-14	114.560	114.561	114.560
Levelling Point	C305-LP103103	21-02-15	Installed	83749.876	36305.582	113.984	07-05-14	114.608	114.607	114.608
Levelling Point	C305-LP103104	21-02-15	Installed	83751.687	36319.326	113.805	07-05-14	114.615	114.615	114.615
Levelling Point	C305-LP107001	02-04-14	Installed	83639.437	36261.712	114.551	21-02-15	113.686	113.685	113.686
Levelling Point	C305-LP107002	02-04-14	Installed	83638.793	36260.467	114.561	21-02-15	113.854	113.854	113.855
Levelling Point	C305-LP107003	02-04-14	Installed	83636.268	36255.592	114.607	21-02-15	113.985	113.984	113.984
Levelling Point	C305-LP107004	02-04-14	Installed	83635.608	36254.324	114.615	21-02-15	113.805	113.805	113.805

Note: All elevations or levels presented in this document are metres above tunnel datum (mATD).

IRS Installation Record Sheets – Shallow Datums											
Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Depth (m bgl)	Commisioning Readings (m)			
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)		Date	Elevation Z1 (mATD)	Elevation Z2 (mATD)	Elevation Z3 (mATD)
Shallow Datum	C305-SD100070	17-10-13	Installed	84445.120	36538.812	112.709	4.8	10-02-14	112.667	112.667	112.667
Shallow Datum	C305-SD100090	15-10-13	Installed	84407.814	36554.921	112.620	4.6	10-02-14	112.581	112.581	112.580
Shallow Datum	C305-SD100130	19-11-13	Installed	83989.233	36438.542	113.893	4.6	02-05-14	113.781	113.781	113.780
Shallow Datum	C305-SD100150	14-10-13	Installed	83932.332	36445.514	113.978	5.2	06-03-14	113.900	113.900	113.900

Note: All elevations or levels presented in this document are metres above tunnel datum (mATD).

IRS Installation Record Sheets – Inclinometers							
Sensor Type	Sensor ID	Date Installation	Status	Sensor Location - GPS Reading			Depth (m bgl)
				Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	
Inclinometer	C305-IM103010	16-10-13	Installed	84452.115	36567.785	112.562	39.00
Inclinometer	C305-IM103020	24-10-13	Installed	84405.655	36531.975	112.646	40.00

Note: All elevations or levels presented in this document are metres above tunnel datum (mATD).

IRS Installation Record Sheets – Rod Extensometer									
Sensor Type	Sensor ID	Date Installation Start	Date Installation Completion	Borehole Depth (m)	Anchor Depth (m)	SENSOR Location - GPS reading (m)			
						Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	
Rod Extensometer	C305-XR103010	17-10-13	17-10-13	31	5.15 / 10.30 / 15.45 / 20.60 / 25.75 / 31.0	84452.617	36569.858	112.560	
Rod Extensometer	C305-XR103020	18-10-13	18-10-13	26	4.0 / 8.5 / 12.5 / 17.0 / 21.5 / 26.0	84451.519	36561.629	112.632	
Rod Extensometer	C305-XR103030	24-10-13	24-10-13	27	4.5 / 9.0 / 13.5 / 18.0 / 22.5 / 27.0	84408.474	36538.342	112.779	
Rod Extensometer	C305-XR103040	25-10-13	25-10-13	32	5.3 / 10.6 / 15.9 / 21.2 / 26.5 / 32.0	84404.503	36530.109	112.604	

Note: All elevations or levels presented in this document are metres above tunnel datum (mATD).

IRS Installation Record Sheets – Rod Extensometer

Sensor Type	Sensor ID	Date Installation Start	Date Installation Completion	Depth (m)	SENSOR Location - GPS reading			Commissioning Readings Head Level (m, mATD) Commissioning Readings Rod Extensometers (mm)			
					Eastings X (m)	Northings Y (m)	Elevation Z (mATD)				
Rod Extensometer	C305-XR103010	17-10-13	17-10-13	Head Level	84452.617	36569.858	112.56	112.036	112.037	112.036	112.036
				5.2				38.362	38.386	38.362	38.370
				10.3				38.948	38.984	38.948	38.960
				15.5				33.266	33.278	33.266	33.270
				20.6				46.112	46.128	46.120	46.120
				25.8				42.888	42.920	42.892	42.900
				31.0				39.450	39.422	39.418	39.430
							13-11-13	13-11-13	13-11-13	AVERAGE	
Rod Extensometer	C305-XR103020	18-10-13	18-10-13	Head Level	84451.519	36561.629	112.632	111.986	111.987	111.986	111.986
				4.0				43.066	43.102	43.102	43.090
				8.5				50.336	50.356	50.328	50.340
				12.5				46.882	46.862	46.866	46.870
				17.0				41.928	41.960	41.932	41.940
				21.5				42.066	42.082	42.062	42.070
				26.0				51.256	51.216	51.248	51.240
							15-11-13	15-11-13	15-11-13	AVERAGE	
Rod Extensometer	C305-XR103030	24-10-13	24-10-13	Head Level	84408.474	36538.342	112.779	112.116	112.115	112.115	112.115
				4.5				39.810	39.846	39.834	39.830
				9.0				30.616	30.644	30.600	30.620
				13.5				37.988	38.004	38.008	38.000
				18.0				47.486	47.446	47.478	47.470
				22.5				48.018	47.990	48.022	48.010
				27.0				49.218	49.250	49.222	49.230
							15-11-13	15-11-13	15-11-13	AVERAGE	
Rod Extensometer	C305-XR103040	25-10-13	25-10-13	Head Level	84404.503	36530.109	112.604	112.004	112.005	112.004	112.004
				5.3				40.156	40.172	40.152	40.160
				10.6				45.976	46.004	46.020	46.000
				15.9				48.158	48.130	48.162	48.150
				21.2				50.704	50.692	50.704	50.700
				26.5				43.802	43.830	43.798	43.810
				32.0				40.484	40.516	40.500	40.500

Head level is the level survey point (levelling point) fixed to the top of the reference head.

All elevations or levels presented in this document are metres above tunnel datum (mATD)

Note: The difference between the Elevation Z reading and Commissioning reding results from the use of a GPS staff and a manual level respectively.

APPENDIX C: MINUTES CLOSE OUT MEETING AREA

Learning Legacy Document



C305 – Eastern Running Tunnels

Minutes of Monitoring Closeout Review Meeting (16/11/2015):

Whitechapel to Liverpool Street - Area 10

CRL Document Number: C305-DSJ-C2-MRC-CRG03-50902

Supplier Document Number: N/A

Contract MDL reference: C20.002

1. Contractor Document Submittal History:

Revision:	Date:	Prepared by:	Checked by:	Approved by:	Reason for Issue:
1.0	02-02-16	N Donadoni	S Hanna	G Savage	For Information

2a. Stakeholder Review Required? YES NO

Stakeholder submission required: LU RfL Purpose of submission: For no objection
 NR LO For information
 DLR Other: _____

This document has been reviewed by the following individual for coordination, compliance, integration and acceptance and is acceptable for transmission to the above stakeholder for the above stated purpose.


Sign: _____ Role: _____ Name: _____ Date: _____

Sign: _____ Role: _____ Name: _____ Date: _____

2b. Review by Stakeholder (if required):

Stakeholder Organisation	Job Title	Name	Signature	Date	Acceptance
					<input type="checkbox"/>

3. Acceptance by Crossrail:

		Crossrail Review and Acceptance Decal			
		This decal is to be used for submitted documents requiring acceptance by Crossrail.			
<input type="checkbox"/>	Code 1.	Accepted. Work May Proceed			
<input type="checkbox"/>	Code 2.	Not Accepted. Revise and resubmit. Work may proceed subject to incorporation of changes indicated			
<input type="checkbox"/>	Code 3.	Not Accepted. Revise and resubmit. Work may not proceed			
<input type="checkbox"/>	Code 4.	Received for information only. Receipt is confirmed			
Reviewed/Accepted by:(signature)		Print Name:	Position:	Date:	
<small>Acceptance by Crossrail does not relieve the designer/supplier from full compliance with their contractual obligations and does not constitute Crossrail approval of design, details, calculations, analyses, test methods or materials developed or selected by the designer/supplier.</small>					

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I&M Close Out Meeting

Date & Time		16/11/2015 14:00	
Meeting No.		8	
<p>Following PMI-1087 all long term monitoring not associated with dewatering or cross passage works has ceased. The purpose of this document is to record review of the monitoring data, and agreement to decommission based on cessation of long term monitoring by DSJV. Agreement from this meeting is then considered acceptance from all parties that the Close Out Report can then be produced based on the data shown and this will be acceptable to the Project Manager.</p>			
Attendees:			
<div style="background-color: black; width: 100%; height: 40px;"></div>			
Data Reviewed			
Monitoring References	Location	Settlement rate	Agreement to decommission
Area 10 - Whitechapel To Liverpool Street			
① C305-LP100101-113	TRANSECT 10A	<2mm - 23% <3mm - 46%	Last 2 readings appear stable - OK
② C305-LP100201-231	TRANSECT 10B	<2mm - 22% <3mm - 64%	Last 2 readings appear stable - OK
③ C305-LP100301-337	TRANSECT 10C	<2mm - 97% <3mm - 100%	OK
④ C305-LP100501-528	HANBURY STREET TRANSECT 10	<2mm - 67% <3mm - 86%	OK
⑤ C305-LP100401-418	TRANSECT 10D	<2mm - 64% <3mm - 86%	OK
⑥ C305-LP100601-613	TRANSECT 10E	<2mm - 97% <3mm - 100%	OK
⑦ C305-LP100701-727	TRANSECT 10F	<2mm - 100% <3mm - 100%	OK
⑧ C305-LP100801-821	PRINCELET STREET	<2mm - 100% <3mm - 100%	OK
⑨ C305-LP100901-935	TRANSECT 10G	<2mm - 94% <3mm - 97%	OK
⑩ C305-LP101001-030	TRANSECT 10H	<2mm - 100% <3mm - 100%	OK
⑪ C305-LP101101-152	BRUSHFIELD STREET	<2mm - 74% <3mm - 93%	OK
⑫ C305-LP101201-215	CRISPIN STREET	<2mm - 79% <3mm - 93%	OK
⑬ C305-LP102402-403	GUN STREET	<2mm - 100% <3mm - 100%	OK

⑭	C305-LP101401-430	TRANSECT 10 I	<2mm - 74% <3mm - 96%	OK
⑮	C305-LP101301-355	WIDE GATE STREET	<2mm - 21% <3mm - 40%	AFFECTED BY CP6 WORKS - OK
⑯	C305-LP101501-520	TRANSECT 10 J (SANDY)	<2mm - 73% <3mm - 73%	AFFECTED BY CP6 WORKS - OK
⑰	C305-LP101601-618	TRANSECT-10 J (MIDDLESEX STREET)	<2mm - 100% <3mm - 100%	DIRECTLY ABOVE CP6 - OK
⑱	C305-LP103101-104	MIDDLESEX STREET (ADDITIONAL L20 POINTS)	<2mm - 100% <3mm - 100%	INSTALLED FOR CP6 WORKS - OK
⑲	C305-LP101701-747	TRANSECT 10 K	<2mm - 23% <3mm - 63%	ONGOING SETTLEMENT AT LAST READING. - OK
⑳	C305-LP101801-827	DEVONSHIRE SQUARE	<2mm - 96% <3mm - 100%	OK
㉑	C305-LP101901-954	TRANSECT 10 L	<2mm - 100% <3mm - 100%	OK
㉒	C305-LP107001-004	NORMWOOD STREET	<2mm - 0% <3mm - 50%	LAST TWO POINTS STABLE - OK
㉓	C305-LP102001-012		<2mm - 100% <3mm - 100%	OK
㉔	C305-LP102101-119	NORMWOOD STREET	<2mm - 100% <3mm - 100%	OK
	C305-LB100101-103	①	<2mm - 100%	OK
	C305-LB100201-205	②	<2mm - 20% <3mm - 60%	Last two readings stable - OK
	C305-LB100301-306	③	<2mm - 50% <3mm - 67%	Last two readings stable - OK
	C305-LB100401-412	④	<2mm - 50% <3mm - 75%	OK
	C305-LB100501-506	⑤	<2mm - 60% <3mm - 100%	OK
	C305-LB100601-607	⑥	<2mm - 29% <3mm - 71%	OK
	C305-LB100702-712	⑦	<2mm - 0% <3mm - 25%	OK
	C305-LB100801-803	⑧	<2mm - 100% <3mm - 100%	OK
	C305-LB100901-906	⑨	<2mm - 80% <3mm - 100%	OK
	C305-LB101001-007	⑩	<2mm - 67% <3mm - 100%	OK

C305-LB101101-102	(10A)	<2mm - 0% <3mm - 0%	Last-2 readings stable OK
C305-LB101201-215	(11)	<2mm - 33% <3mm - 42%	ABOVE CP 8: WBSTM STOPPED AT THIS LOCATION - OK
C305-LB101301-305	(12)	<2mm - 40% <3mm - 40%	LAST 2 READINGS STABLE - OK
C305-LB101401-403	(13)	<2mm - 100% <3mm - 100%	OK
C305-LB101501-502	(14)	<2mm - 0% <3mm - 0%	Last two readings stable - OK
C305-LB101601-611	(15)	<2mm - 100% <3mm - 100%	- OK
C305-LB101701-721	(16)	<2mm - 75% <3mm - 100%	- OK
C305-LB101801-814	(17)	<2mm - 85% <3mm - 85%	- OK
C305-LB102001-010	(18)	<2mm - 50% <3mm - 50%	Last two points readings stable - OK
C305-LB102101-1110	(19)	<2mm - 67% <3mm - 89%	- OK
C305-LB101901-910	(20)	<2mm - 0% <3mm - 0%	(PREVIOUS READINGS STABLE) OK
C305-LB102201-222	(21) SPITALFIELDS MARKET	<2mm - 37% <3mm - 53%	OK
C305-LB102301-303	(22)	<2mm - 33% <3mm - 33%	OK
C305-LB102401-405	(23)	<2mm - 100% <3mm - 100%	OK
C305-LB102501-503	(24)	<2mm - 100% <3mm - 100%	OK
C305-LB102701-704	(25)	<2mm - 0% <3mm - 0%	Last two readings stable - OK
C305-LB102603-607	(26)	<2mm - 100% <3mm - 100%	- OK
C305-LB102801-805	(27)	<2mm - 60% <3mm - 80%	- OK
C305-LB103001-004	(28)	<2mm - 0% <3mm - 25%	Last readings stable - OK
C305-LB103101-113	(29)	<2mm - 67% <3mm - 67%	- OK
C305-LB103301-310	(30)	<2mm - 86% <3mm - 86%	- OK

C305-LB103201-202	(31)	<2mm - 0% <3mm - 50%	OK
C305-LB103501-507	(32)	<2mm - 71% <3mm - 71%	OK
C305-LB103403-404	(33)	<2mm - 100% <3mm - 100%	OK
C305-LB103701-715	(34)	<2mm - 100% <3mm - 100%	OK
C305-LB103801-802	(35)	<2mm - N/A <3mm - N/A	MONITORING POINTS COVERED BY 3RD PARTY WORKS, NO POST READINGS.
C305-LB103908-909	(36)	<2mm - 100% <3mm - 100%	OK
C305-LB104001-008	(37)	<2mm - 0% <3mm - 20%	OK

Notes

Sign off

DSJV Geocisa Crossrail C122

[Redacted Signature Area]

Learning Legacy Document

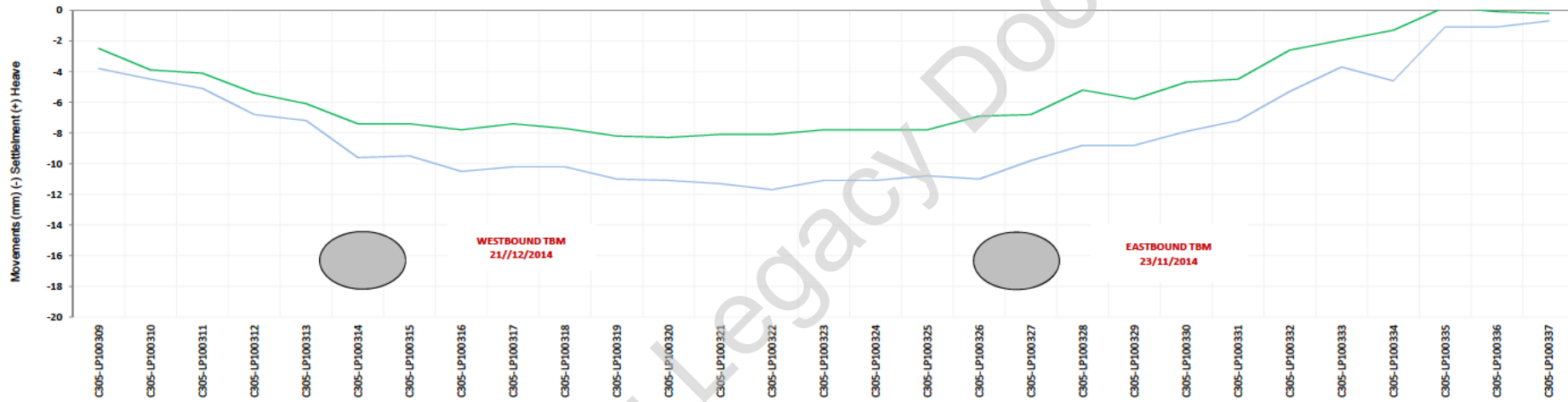
Learning Legacy Document

APPENDIX D: DEFLECTION RATIO

AREA 10 Deal Street PROFILE
C305-LP100309-C305-LP100337

SOUTH

NORTH

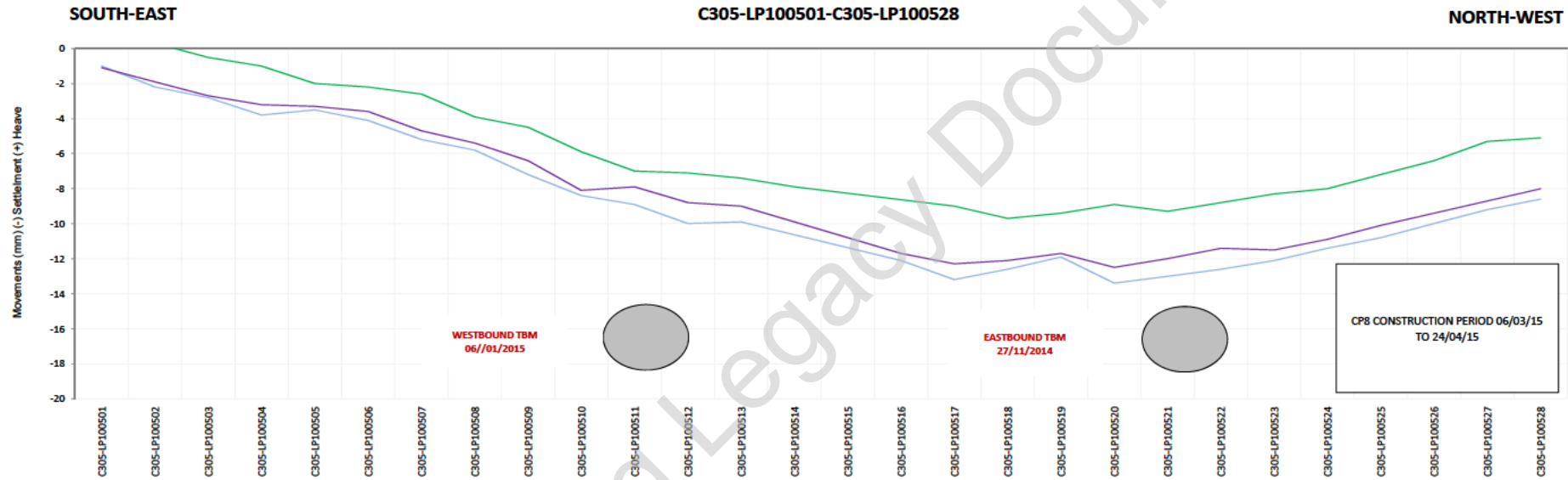


NOTE: x axis is of monitoring points and is not a scaled distance

TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO	
			TBMs Passage	Long Term
10 C	1/2000	1/2000	1/11751	1/8118

— 02/01/2015 AFTER TBMs TRANSIT
— 24/06/2015 LONG TERM

**AREA 10 Hanbury Street (West of Deal St.) PROFILE
C305-LP100501-C305-LP100528**

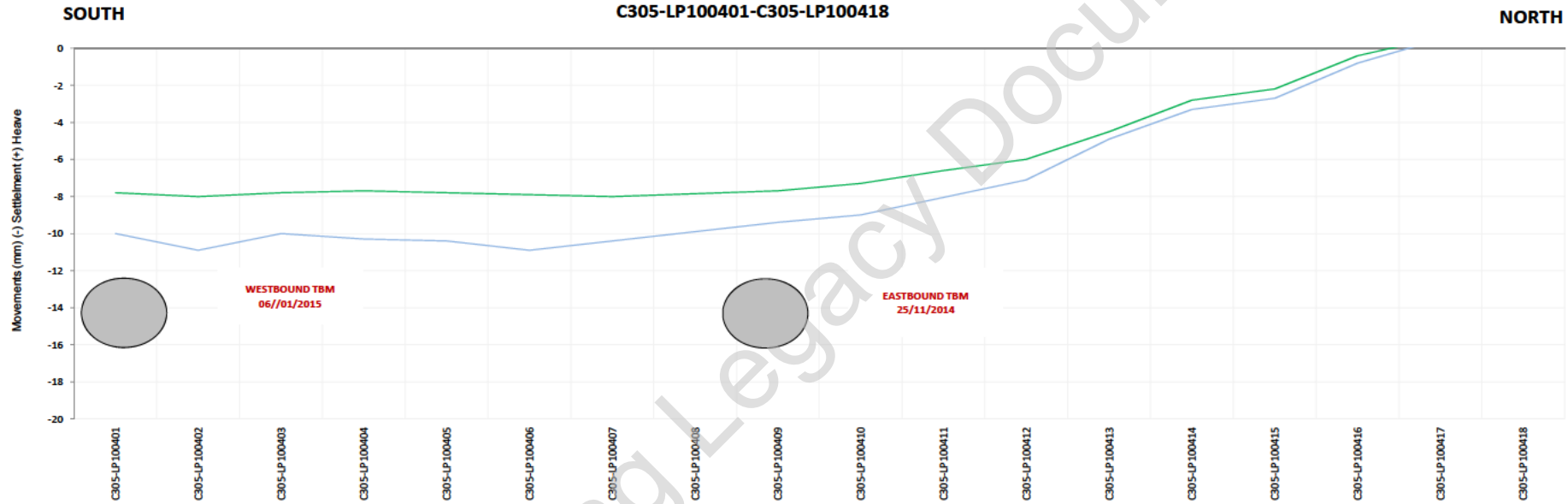


NOTE: x axis is of monitoring points and is not a scaled distance

TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO		
			TBMs Passage	Long Term	AFTER CP8 Construction
Hanbury St.	1/2000	1/2000 - 1/2600	1/24152	1/13988	1/16283

- 16/01/2015 AFTER TBMs TRANSIT
- 12/08/2015 LONG TERM
- 07/05/2015 AFTER CP8 CONSTRUCTION

**AREA 10 Daplyn Street PROFILE
C305-LP100401-C305-LP100418**

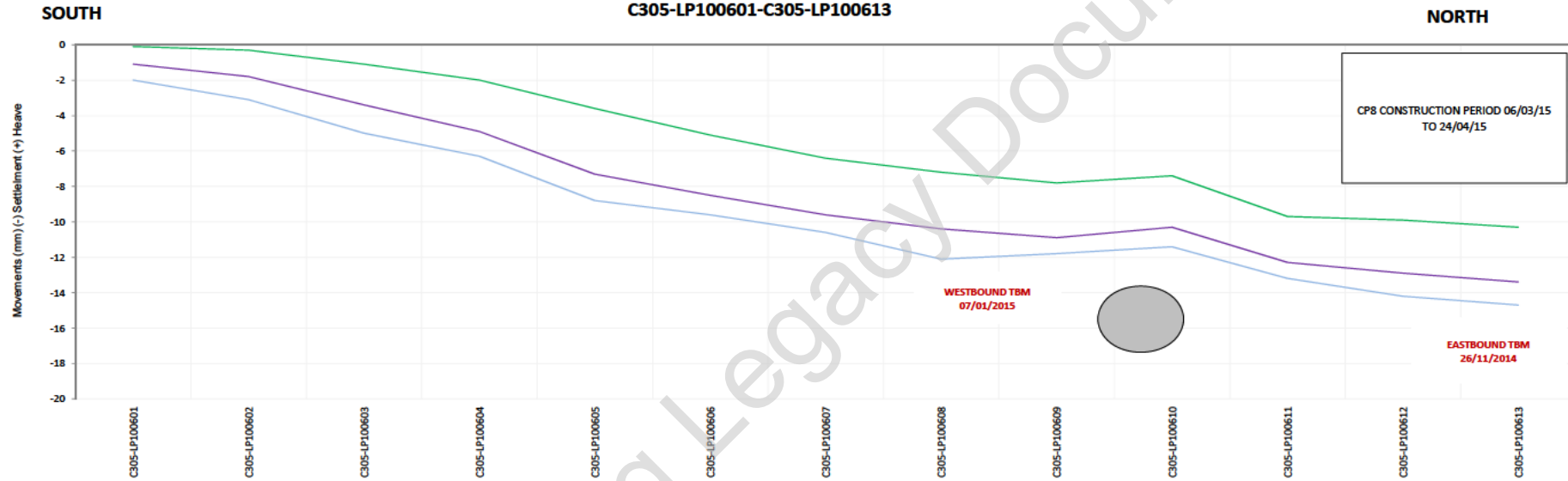


NOTE: x axis is of monitoring points and is not a scaled distance

TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO	
			TBMs Passage	Long Term
10 D	1/2000	1/2000	1/20581	1/21333

— 18/01/2015 AFTER TBMs TRANSIT
— 12/08/2015 LONG TERM

**AREA 10 Spellman Street PROFILE
C305-LP100601-C305-LP100613**

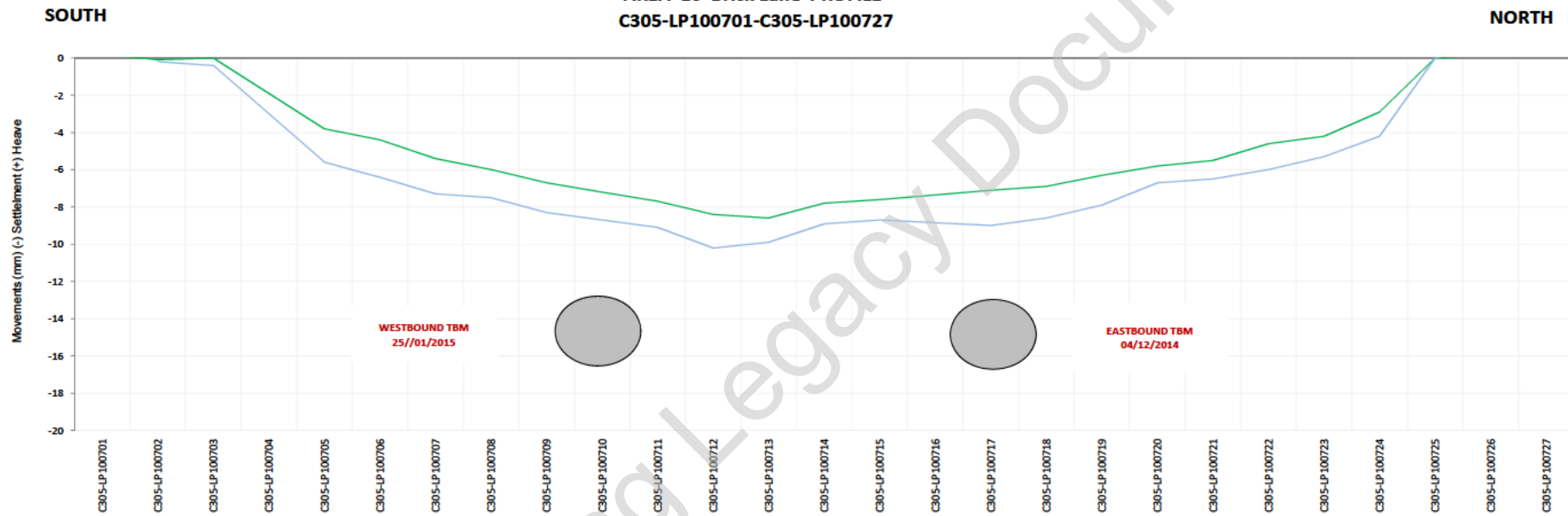


NOTE: x axis is of monitoring points and is not a scaled distance

TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO		
			TBMs Passage	Long Term	AFTER CP8 Construction
10 E	1/2000	1/2000	1/12881	1/8844	1/12380

- 17/01/2015 AFTER TBMs TRANSIT
- 12/08/2015 LONG TERM
- 08/05/2015 AFTER CP8 CONSTRUCTION

**AREA 10 Brick Lane PROFILE
C305-LP100701-C305-LP100727**

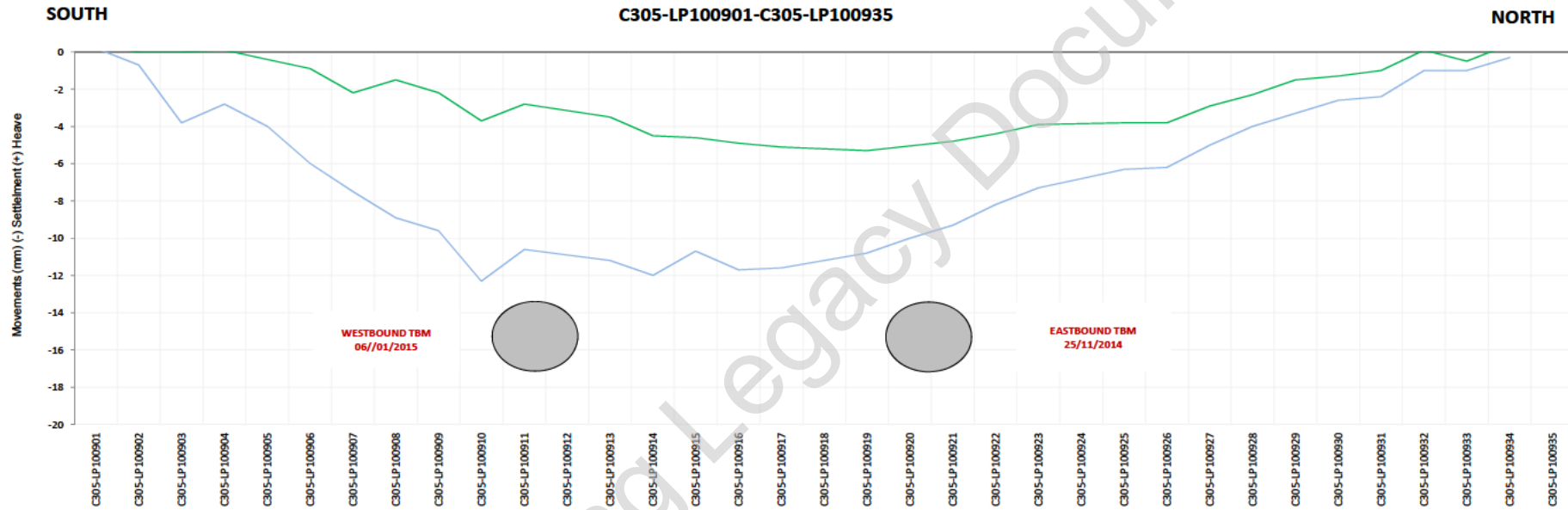


NOTE: x axis is of monitoring points and is not a scaled distance

TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO	
			TBMs Passage	Long Term
10 F	1/2000	1/2000	1/15975	1/12817

— 01/02/2015 AFTER TBMs TRANSIT
— 25/08/2015 LONG TERM

**AREA 10 Wilkes Street PROFILE
C305-LP100901-C305-LP100935**



NOTE: x axis is of monitoring points and is not a scaled distance

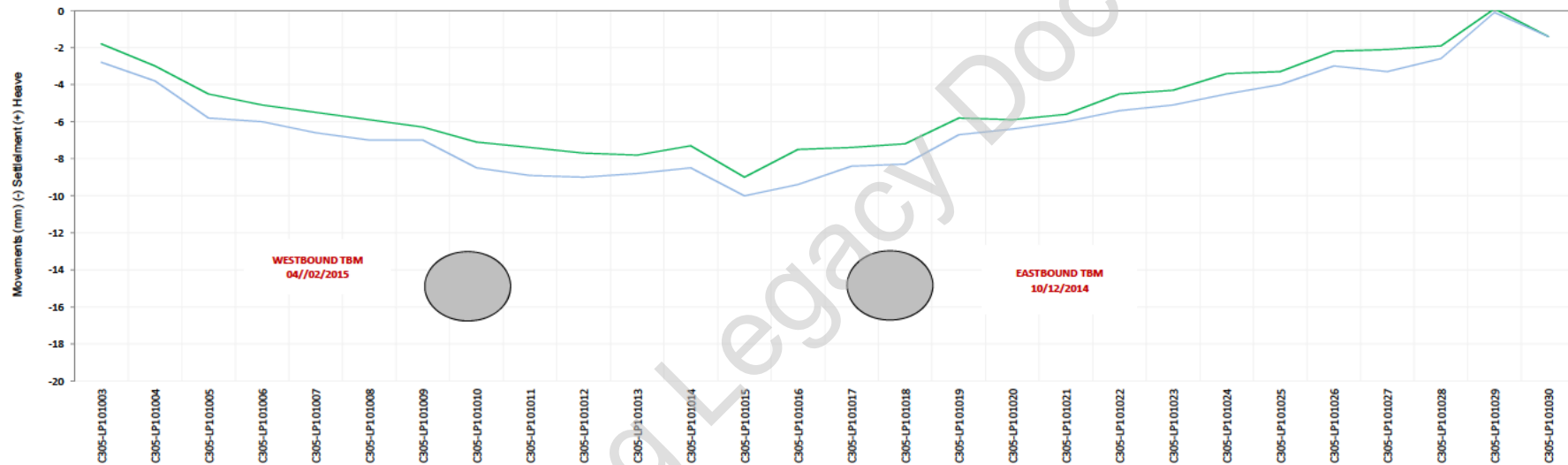
TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO	
			TBMs Passage	Long Term
10 G	1/2800	1/2000	1/11581	1/7005

— 08/01/2015 AFTER TBMs TRANSIT
— 24/08/2015 LONG TERM

**AREA 10 Commercial Street PROFILE
C305-LP101001-C305-LP101030**

SOUTH

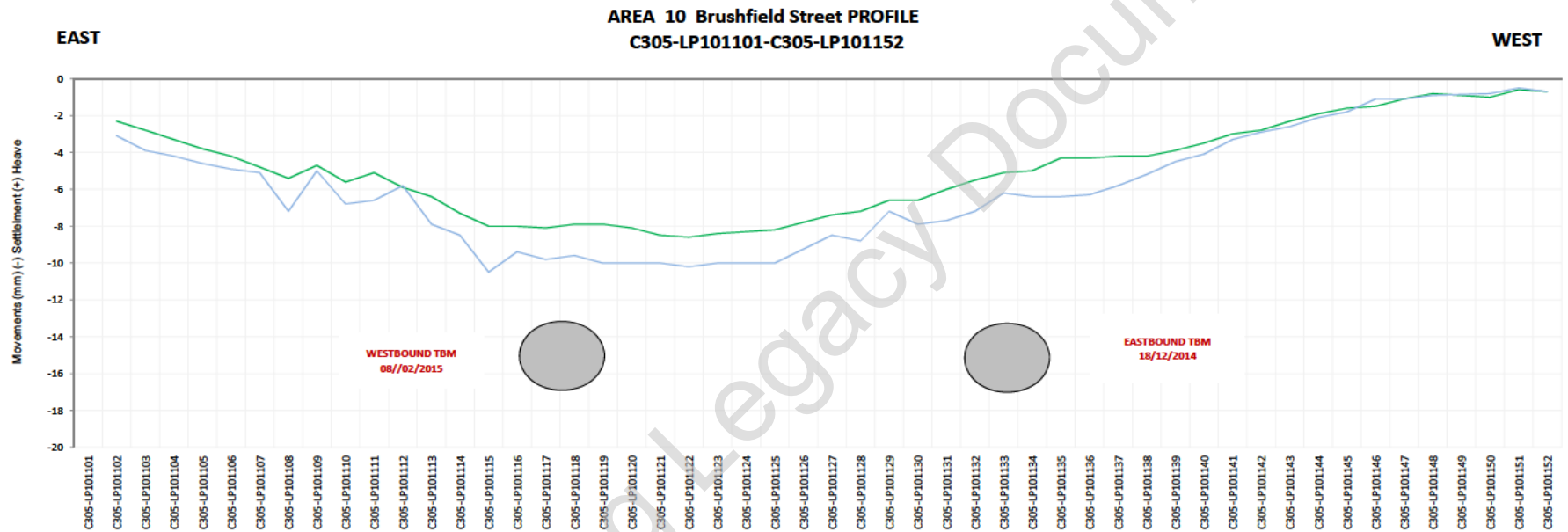
NORTH



NOTE: x axis is of monitoring points and is not a scaled distance

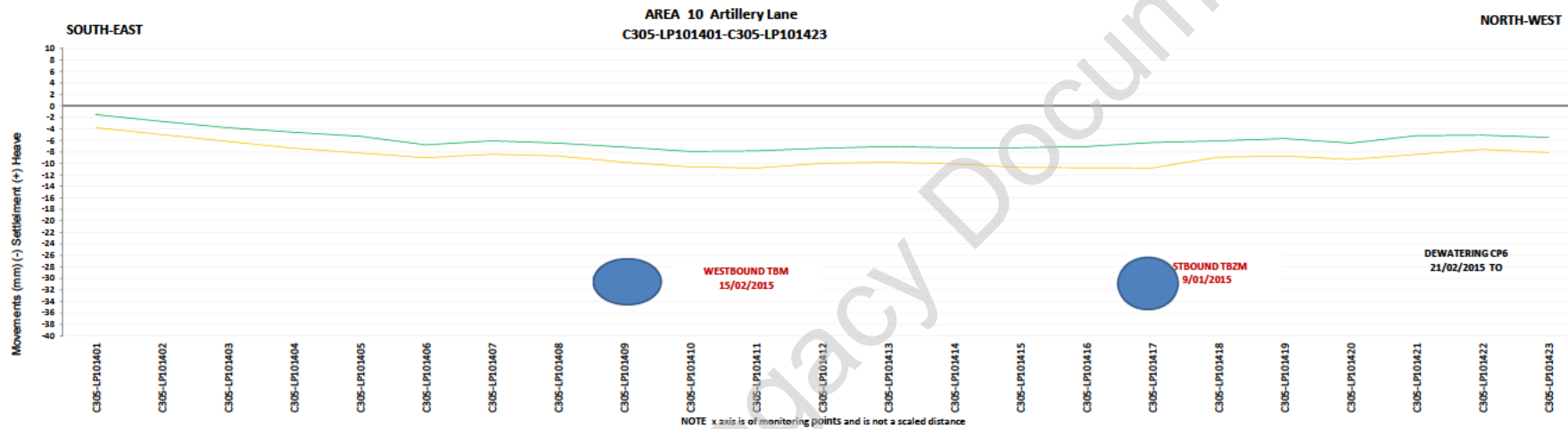
TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO	
			TBMs Passage	Long Term
10 H	1/3200 - 1/2000	1/2000	1/14008	1/9574

— 09/02/2015 AFTER TBMs TRANSIT
— 24/08/2015 LONG TERM



TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO	
			TBMs Passage	Long Term
Brushfield St.	1/2600 - 1/1800	1/2000	1/19114	1/8042

— 14/02/2015 AFTER TBMS TRANSIT
— 24/08/2015 LONG TERM



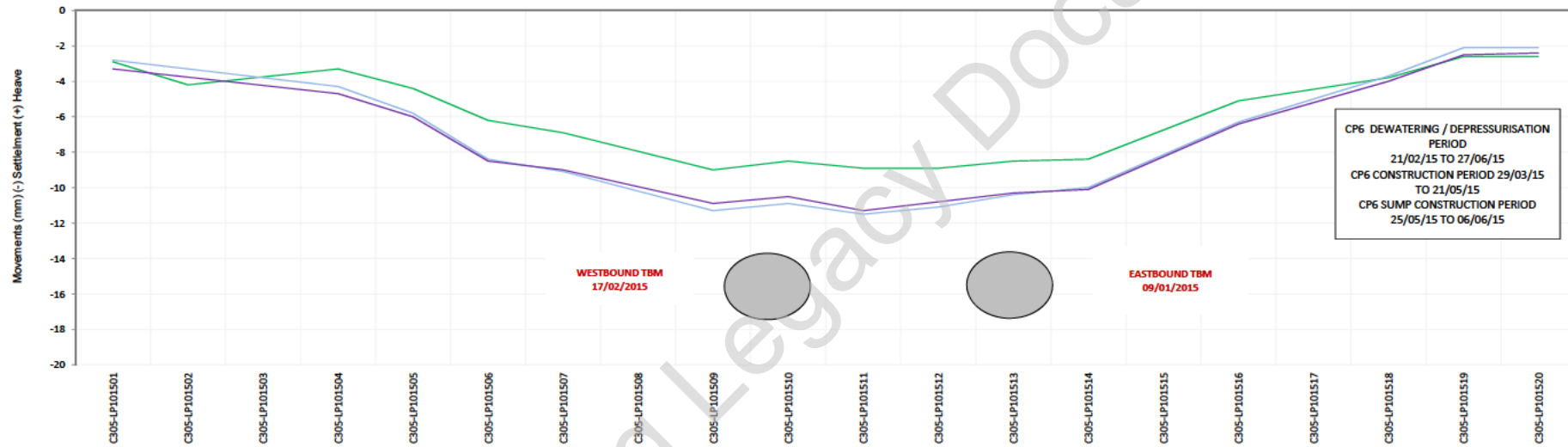
TRANSECT	Alert value	Amber trigger	MAX DEFLECTION RATIO	
			TBMs Passage	After Dewatering
Artillery Lane	1/2000	1/2000	1/8772	1/11865

— 15/02/2015 AFTER TBMs TRANSIT / BEFORE CP6 DEWATERING
— 20/07/2015 AFTER DEWATERING CP 6

**AREA 10 Sandy's Row PROFILE
C305-LP101501-C305-LP101520**

SOUTH-EAST

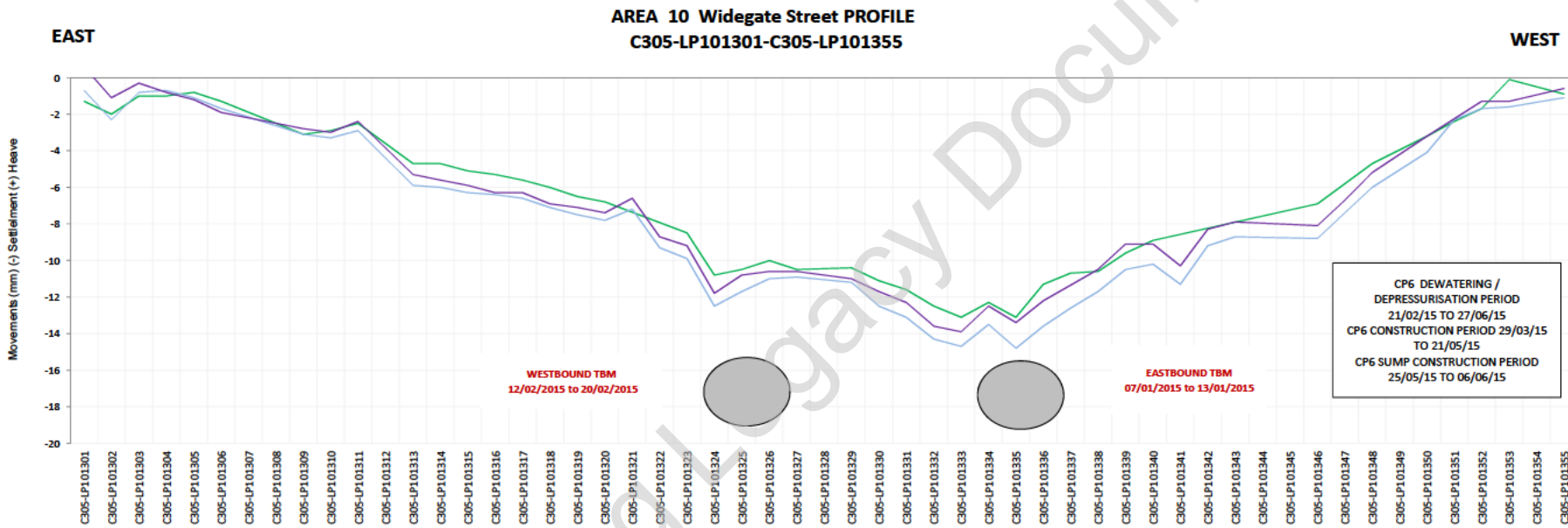
NORTH-WEST



NOTE: x axis is of monitoring points and is not a scaled distance

TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO		
			TBMs Passage	Long Term	AFTER CP6 Dewatering
Sandy's Row	1/2000	1/2000	1/38828	1/27558	1/25259

- 24/02/2015 AFTER TBMs TRANSIT
- 13/07/2015 LONG TERM
- 08/07/2015 AFTER CP6 DEWATERING



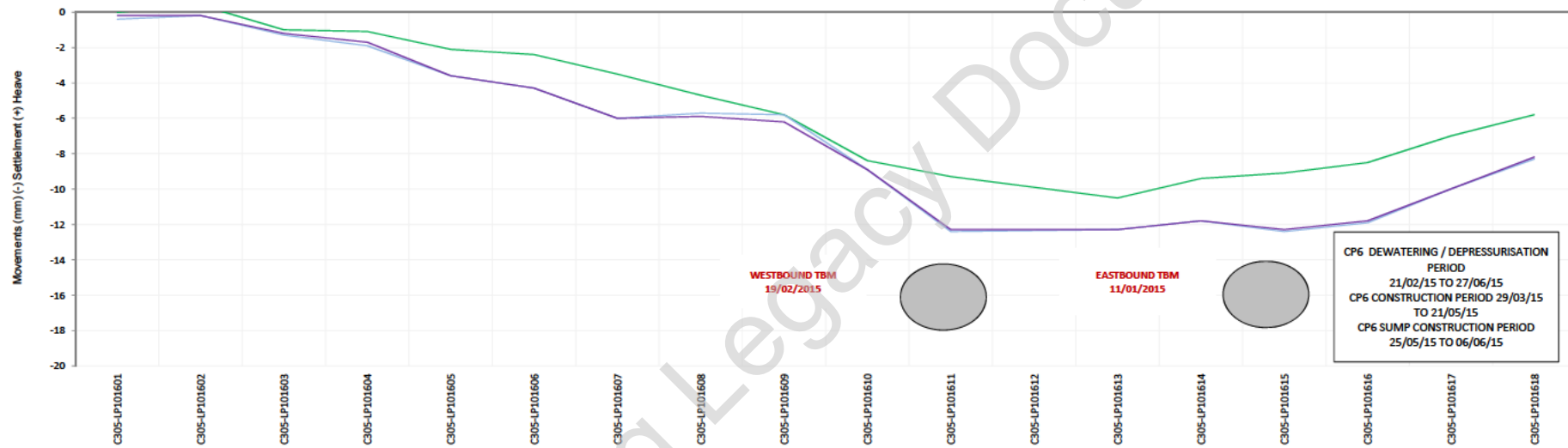
TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO		
			TBMs Passage	Long Term	AFTER CP6 Dewatering
Widegate St.	1/2000	1/2000	1/12972	1/8783	1/10202

- 04/03/2015 AFTER TBMs TRANSIT
- 20/07/2015 LONG TERM
- 01/07/2015 AFTER CP6 DEWATERING

**AREA 10 Middlesex Street PROFILE
C305-LP101601-C305-LP101618**

SOUTH-EAST

NORTH-WEST



NOTE: x axis is of monitoring points and is not a scaled distance

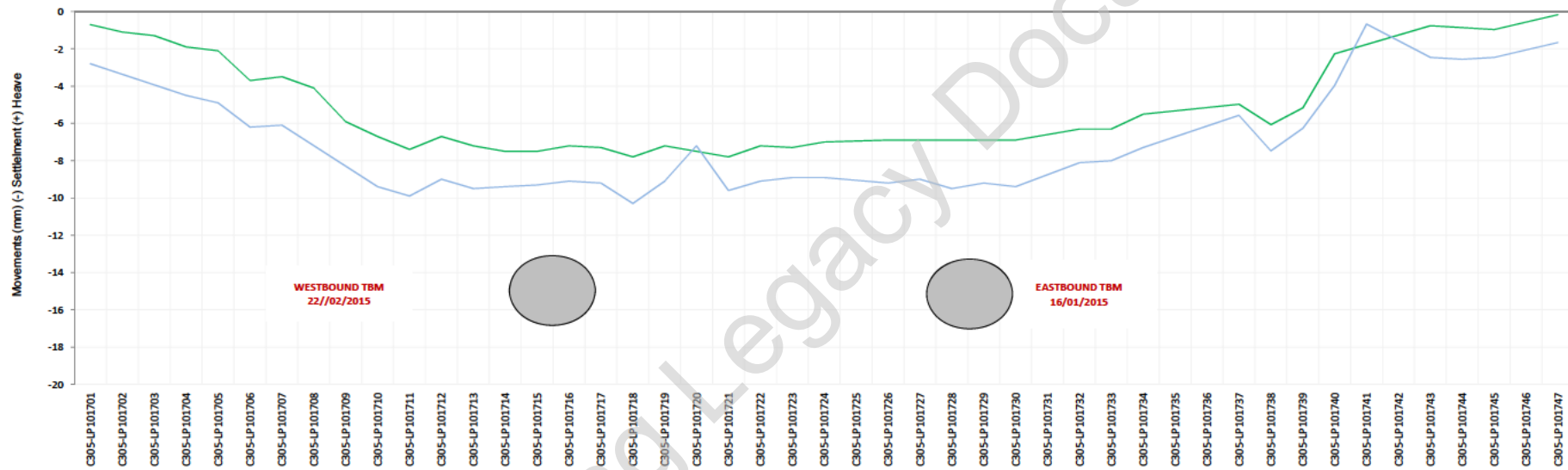
TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO		
			TBMs Passage	Long Term	AFTER CP6 Dewatering
10 J	1/2000	1/2000	1/13392	1/11351	1/13332

- 28/02/2015 AFTER TBMs TRANSIT
- 20/07/2015 LONG TERM
- 13/07/2015 AFTER CP6 DEWATERING

**AREA 10 New Street PROFILE
C305-LP101701-C305-LP101736**

SOUTH-EAST

NORTH-WEST



NOTE: x axis is of monitoring points and is not a scaled distance

TRANSECT	ALERT VALUE	AMBER TRIGGER VALUE	MAX DEFLECTION RATIO	
			TBMs Passage	Long Term
10 K	1/2000	1/2000	1/9888	1/8016

— 05/03/2015 AFTER TBMs TRANSIT
— 27/08/2015 LONG TERM

C305 Deflection Ratio - Area 10 Tracker (DR calculation no required)

Loc.	Sub-location	SAI Area	Road	Maximum Recorded movement (+/-mm)	Relevant I&M		Water Mains	Sewers	Comment
					Levelling Points	Shallow Datums	Spec Deflection Ratio; 1 in X	Spec Deflection Ratio; 1 in X	
Y	WHI-LIS	10	Princelet Street (West of Brick Lane)	-7	LP100801-LP100821	-	-	2000	
Y	WHI-LIS	10	Crispin Street	-7	LP101201-LP101215	-	-	2000	
Y	WHI-LIS	10	Gun Street	-10	LP102402 + LP102403	-	-	2000	Insufficient points for a deflection ratio calculation.
Y	WHI-LIS	10	Steward Street	-6	LP101424-LP101430	-	-	2000	
Y	WHI-LIS	10	Artillery Passage	-9	LP101309-LP101323	-	-	2000	
Y	WHI-LIS	10	Devonshire Row	-5	LP101802-LP101825	-	2000	2000	
Y	WHI-LIS	10	Bishopsgate Street	-6	LP101901-LP101954	-	2700 2600	2100 2300	

Learning Legacy Document

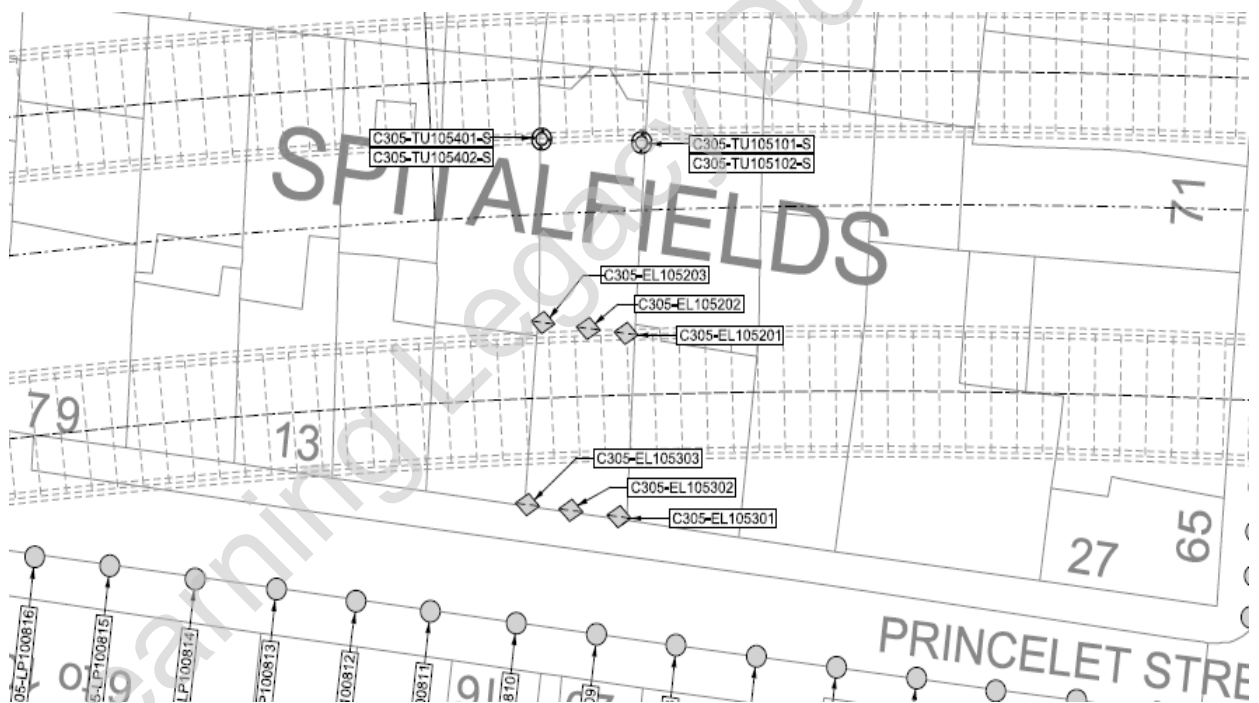
APPENDIX E: 19 PRINCELET STREET

This appendix presents the data of the monitoring instrumentation installed at 19 Princelet Street.

In accordance with I&M Installation Report NO. 19 Princelet Street (Spitalfields) - Drive Y, document no. C305-DSJ-C2-RGN-CRG03-50391 Rev 2.0, the total number of instruments is as follows:

- Electrolevels: 4
(C305-EL105201-S, C305-EL105202-S, C305-EL105301-S and C305-EL105302-S)
- Tiltmeters: 4
(C305-TU105401-S, C305-TU105402-S, C305-TU105101-S and C305-TU105102-S)

See below plan view of the instrument location:



NOTE: C305-EL105301 to C305-EL105303 and C305-EL105201 to C305-EL105203 represent the electrolevels anchor points.

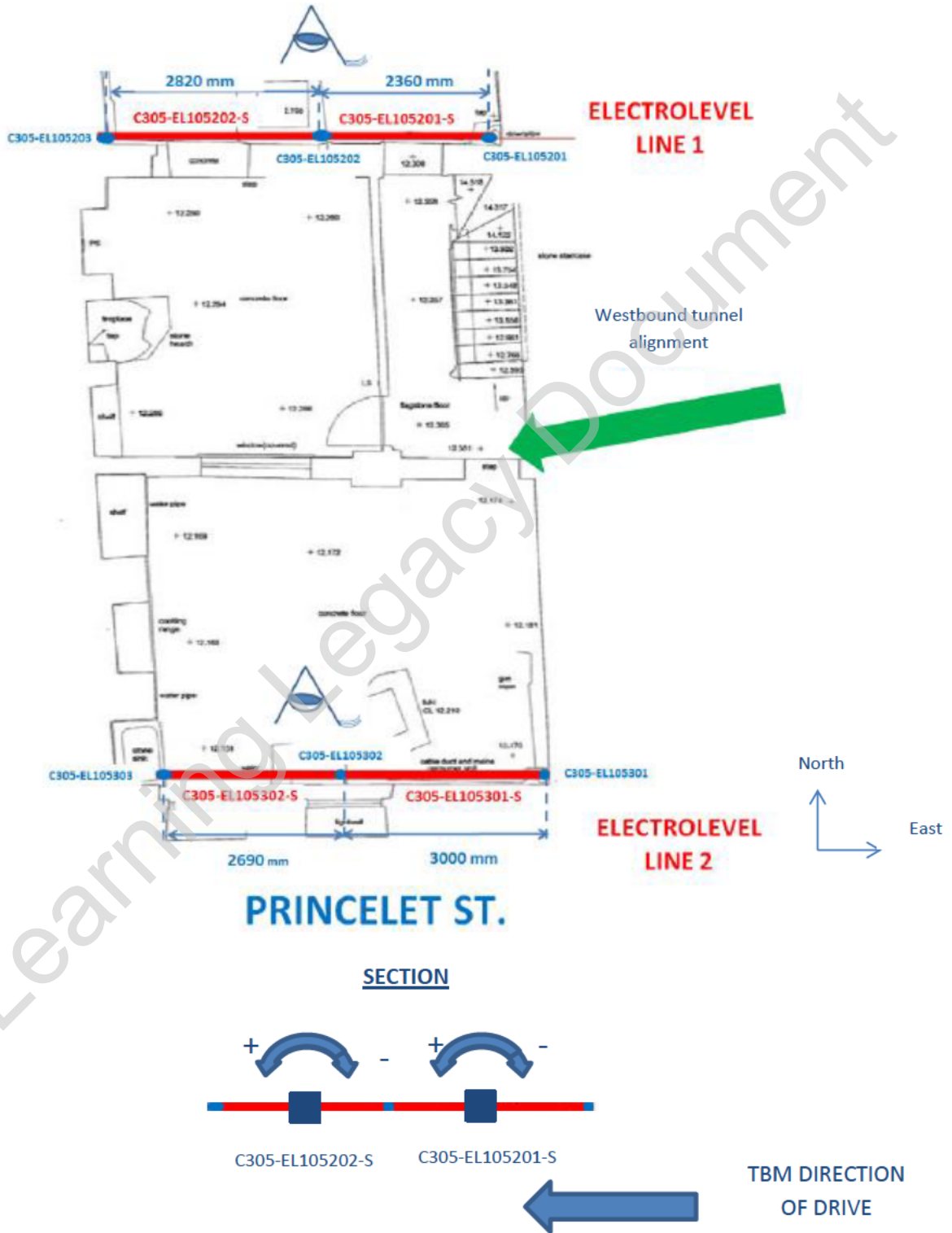
Detailed information of the above instrumentation is reported in the following table.

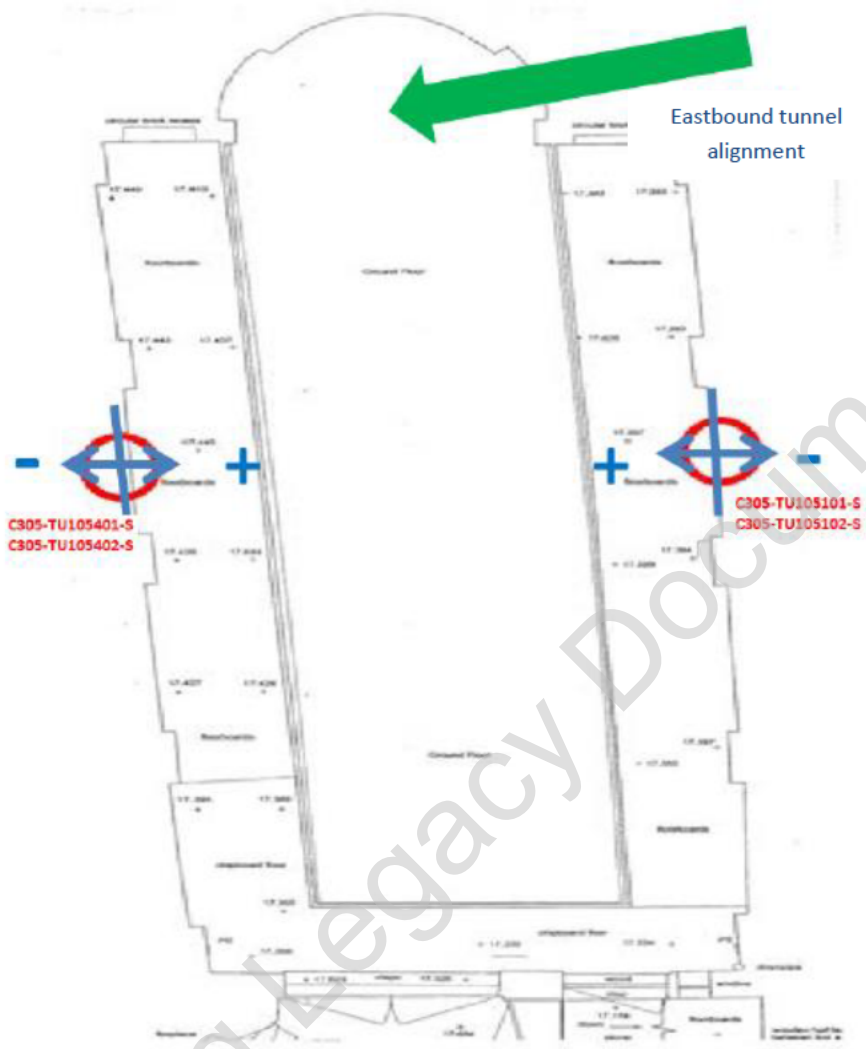
Summary Installed Instrumentation - Electrolevels

Sensor Type	Sensor ID	Sensor Serial Number	Date Installation	Status	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)	Comm. Readings (mm)		
								08-10-14	09-10-14	10-10-14
Tiltmeter	C305-TU105101-S	003478	01-10-14	INSTALLED	84185.065	36545.783	118.1130	0.016	0.011	0.013
								08-10-14	09-10-14	10-10-14
Tiltmeter	C305-TU105102-S	003450	01-10-14	INSTALLED	84185.065	36545.783	118.1130	0.002	0.001	-0.001
								10-11-14	11-11-14	12-11-14
Tiltmeter	C305-TU105401-S	003561	02-10-14	INSTALLED	84178.905	36545.237	118.1130	0.320	0.307	0.304
								10-11-14	11-11-14	12-11-14
Tiltmeter	C305-TU105402-S	003638	02-10-14	INSTALLED	84178.905	36545.237	118.1130	0.151	0.146	0.160
								08-10-14	09-10-14	10-10-14
Electrolevel Beam	C305-EL105201-S	004749	02-10-14	INSTALLED	84184.214	36534.989	115.6390	-0.629	-0.589	-0.566
								08-10-14	09-10-14	10-10-14
Electrolevel Beam	C305-EL105202-S	003900	02-10-14	INSTALLED	84181.624	36534.989	115.6390	-0.174	-0.199	-0.117
								08-10-14	09-10-14	10-10-14
Electrolevel Beam	C305-EL105301-S	004755	02-10-14	INSTALLED	84184.676	36524.685	113.6390	0.010	-0.020	-0.013
								08-10-14	09-10-14	10-10-14
Electrolevel Beam	C305-EL105302-S	004517	02-10-14	INSTALLED	84181.831	36524.685	113.6390	-0.409	-0.547	-0.506

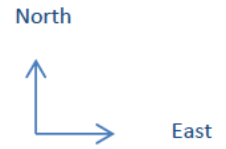
Monitoring ID	Eastings X (m)	Northings Y (m)	Elevation Z (mATD)
*C305-EL105201	84185.394	36534.989	115.639
*C305-EL105202	84183.034	36534.989	115.639
*C305-EL105203	84180.214	36534.989	115.639
*C305-EL105301	84186.176	36524.685	113.639
*C305-EL105302	84183.176	36524.685	113.639
*C305-EL105303	84180.486	36524.685	113.639

The monitoring data of the instruments installed at 19 Princelet Street are presented in the following graphs. The sign conventions are reported below.



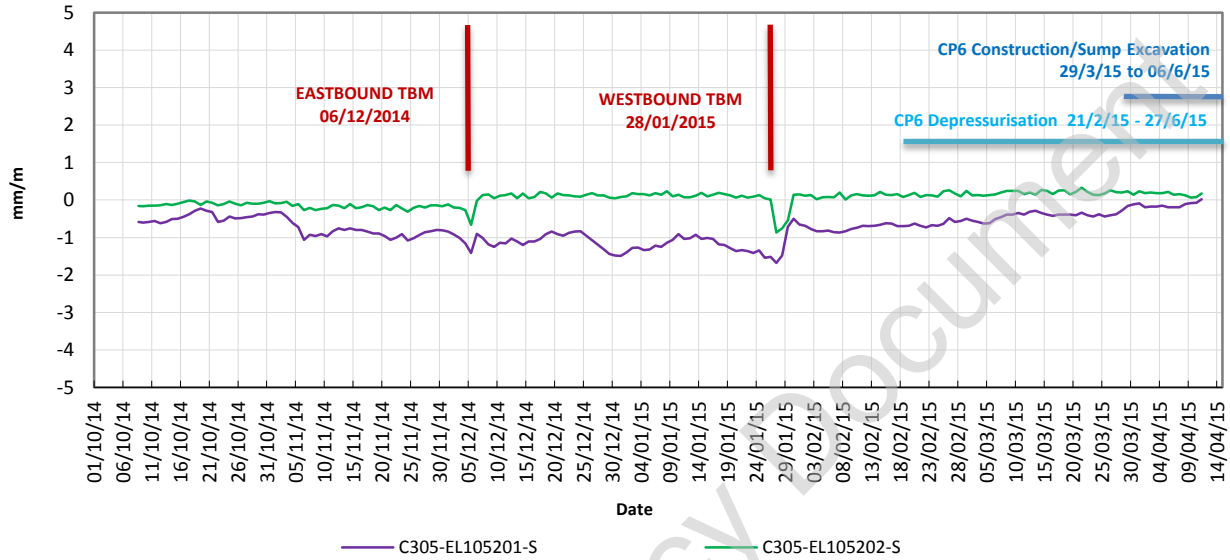


PRINCELET ST.

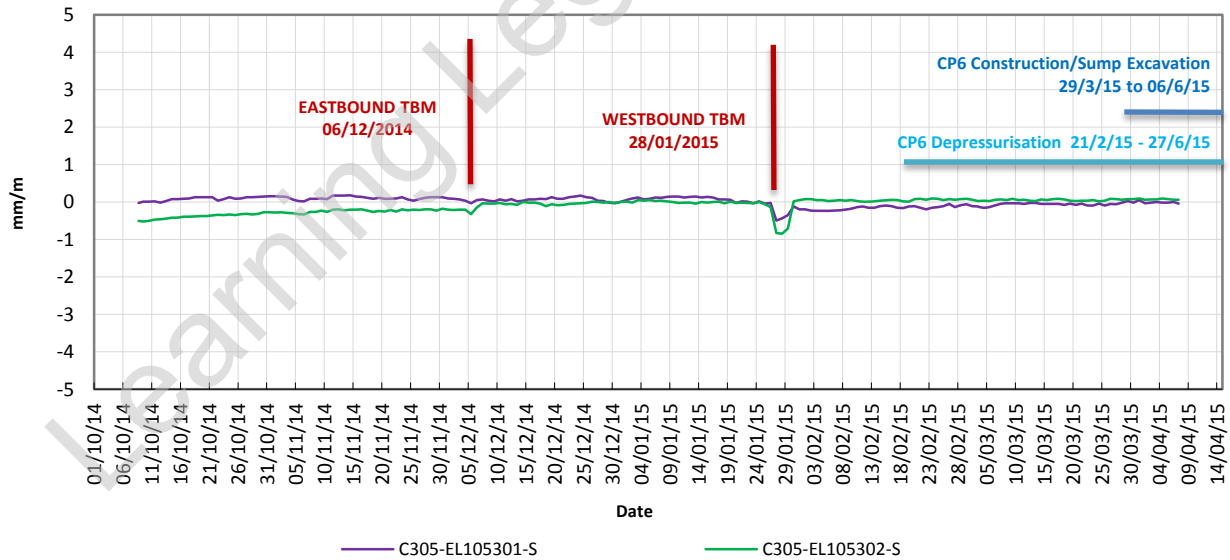


ELECTROLEVELS

AREA 10 - Whitechapel Station to Liverpool Street Station
Electrolevels - Princelet Street

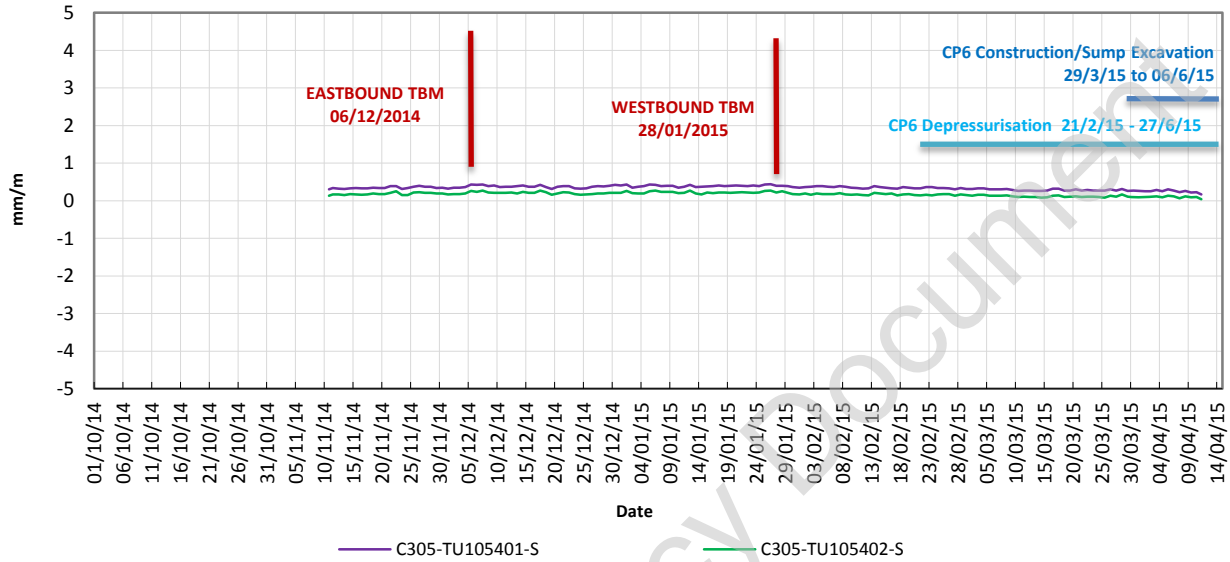


AREA 10 - Whitechapel Station to Liverpool Street Station
Electrolevels - Princelet Street



TILTMETERS

**AREA 10 - Whitechapel Station to Liverpool Street Station
 Tiltmeters - Princelet Street**



**AREA 10 - Whitechapel Station to Liverpool Street Station
 Tiltmeters - Princelet Street**

