

MADE IN HULL



QUESTIONS

IS IT POSSIBLE TO TRANSPORT A 75M LONG WIND TURBINE BLADE INTO THE CENTRE OF THE CITY?

WHAT IS THE PREFERRED LOCATION FOR THE ARTWORK?

WHAT ARRANGEMENTS & CONSENTS WILL BE REQUIRED?

HOW WILL THE ARTWORK BE TECHNICALLY FACILITATED?

BLADE

NAYAN KULKARNI

AN INTERRUPTION IN THE CITY OF HULL

ARTISTIC INTENTION

AN UNPRECEDENTED SCULPTURAL READYMADE

CREATING A BEAUTIFUL AND DYNAMIC PRESENCE IN THE CITY

DEVELOPING A CONVERSATION ABOUT NEW FORMS OF TECHNOLOGY
AND LABOUR

A SURPRISE AND AN INTERRUPTION

The broad, thin, expanded part of a leaf or petal; the lamina*

Oxford English Dictionary

First the blade, then the eare, after that the full corne in the eare.

Mark 4:28

*lamina flow from aerodynamics

SCULPTURE

IN THE CITY (A VERY BRIEF HISTORY)



Wilberforce Monument & Dock Offices, Hull.

Hull: The Good Old Days

WILBERFORCE MONUMENT, HULL



MONUMENT TO THE THIRD INTERNATIONAL, TATLIN



TITLED ARC, RICHARD SERRA



HOLLYWOOD, MAURIZIO CATTELAN



SCULPTURE PUPPY, JEFF KOONS



CLOUD GATE, ANISH KAPOOR



THE IRON CURTAIN, CHRISTO

SCULPTURE

THE READYMADE



BICYCLE WHEEL, MARCEL DUCHAMP



HAND MADE IN HULL

B75

SIEMENS



31
B

SIEMENS

SIEMENS
GET

WFT RO-MOVER 1

PERSONENTRANSPORT
VERBODEN

2M

DEINSE SIDE
MOO ROD



TRANSPORT

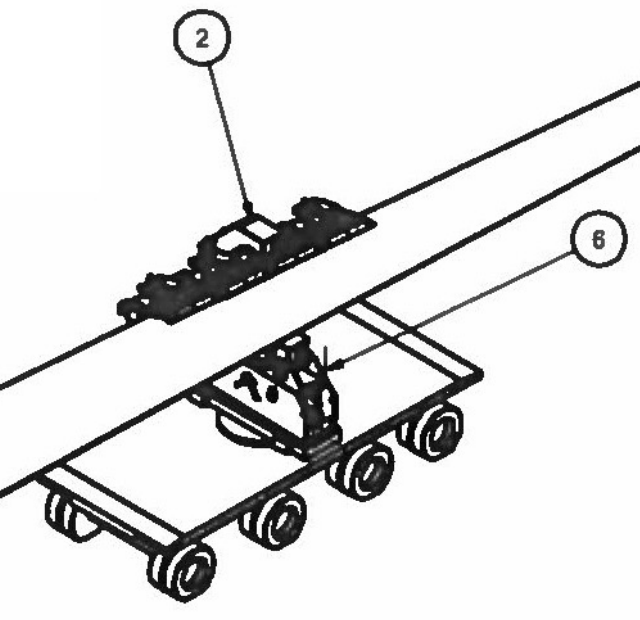
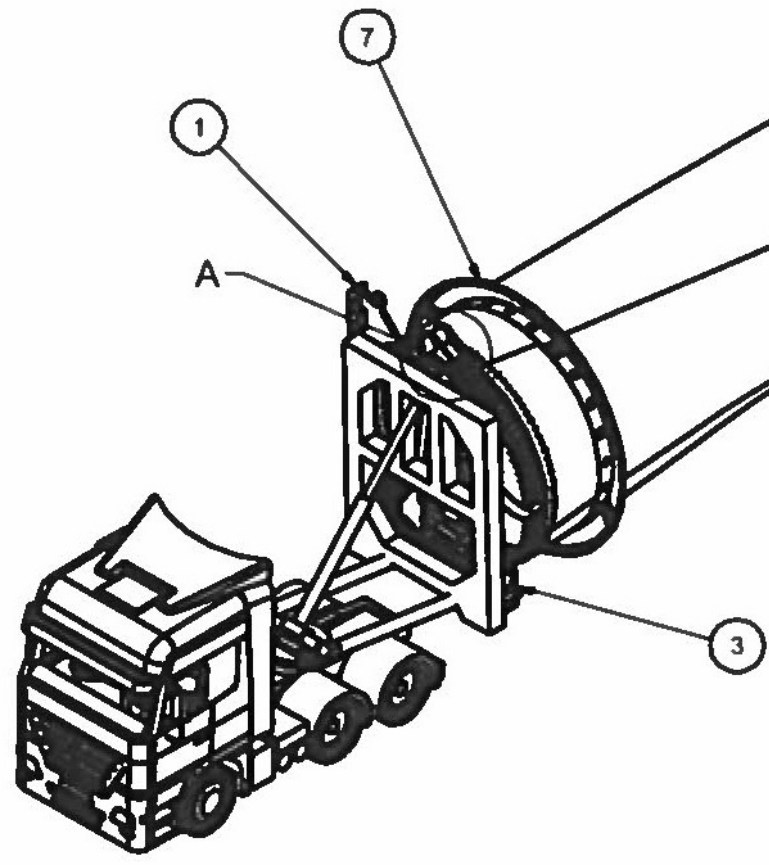
SIEMENS & A.L.E.



**QUEEN
VICTORIA
SQUARE**

**ALEXANDRA
DOCKS**

BLADE TO BE TRANSPORTED BY A WORLD LEADING SPECIALIST:
ABNORMAL LOAD ENGINEERING (ALE).







DRAWING NOTES:

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TECHNICAL NOTES:

- ROUTE FROM ALEXANDRA DOCK TO HULL CITY CENTRE.
- ROUTE A - DOCK EXIT VIA EASTERN GATE ONTO NORTHERN GATEWAY ROUNDABOUT.
- ROUTE B - DOCK EXIT VIA WESTERN GATE ONTO EARLE'S ROAD. JOINS ROUTE A ON A63.
- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001



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File Location: Z:\Public\Job Files\AA0000 -AA0971 - Siemens Hull - B75 Blades and Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-002-0 - SP - Hull

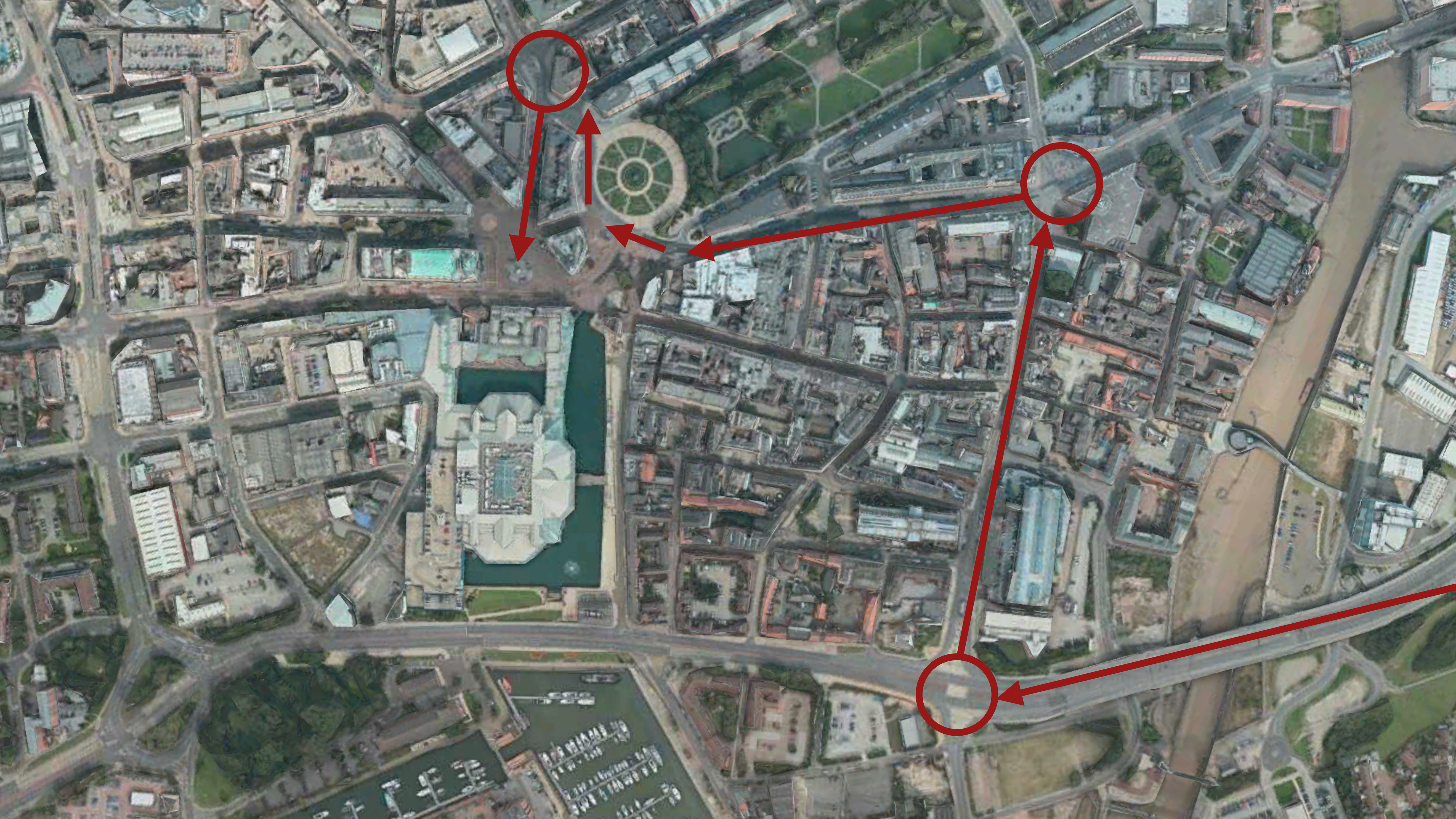
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Rev.	Date	Drawn	Check	Description
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Client: SIEMENS				
Project Title: B75 ROUTE SURVEY REPORT				
Drawing Title: SWEPT PATH ANALYSIS - HULL CITY CENTRE ROUTE OVERVIEW				
Date: 29/07/16	Drawn: BE	Checked:	Scale (A1): NTS	Sheet: 1 of 10
Project No. AA0971-04	Drawing No. DRW-AA0971-04-002		Rev.:	0

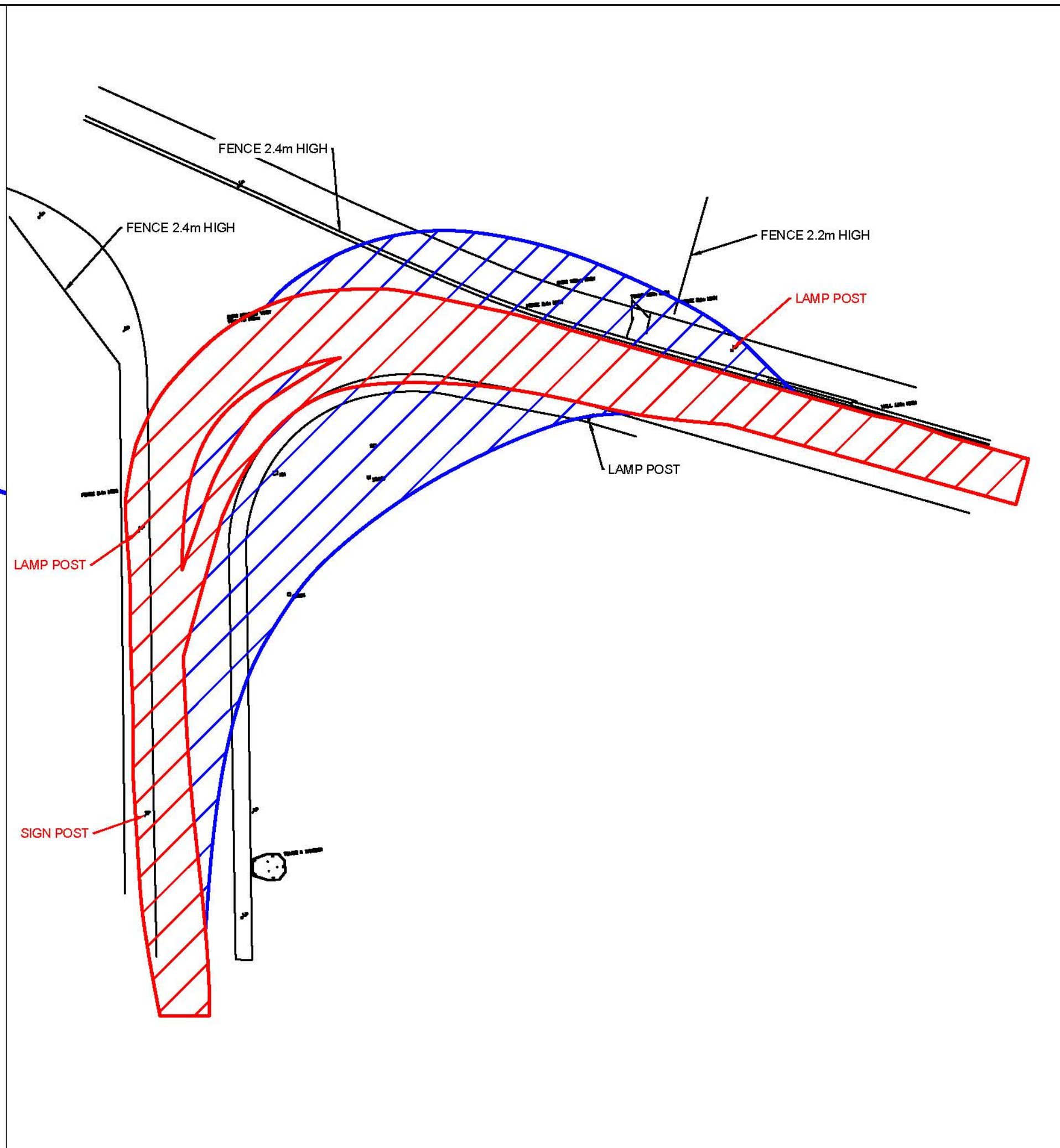
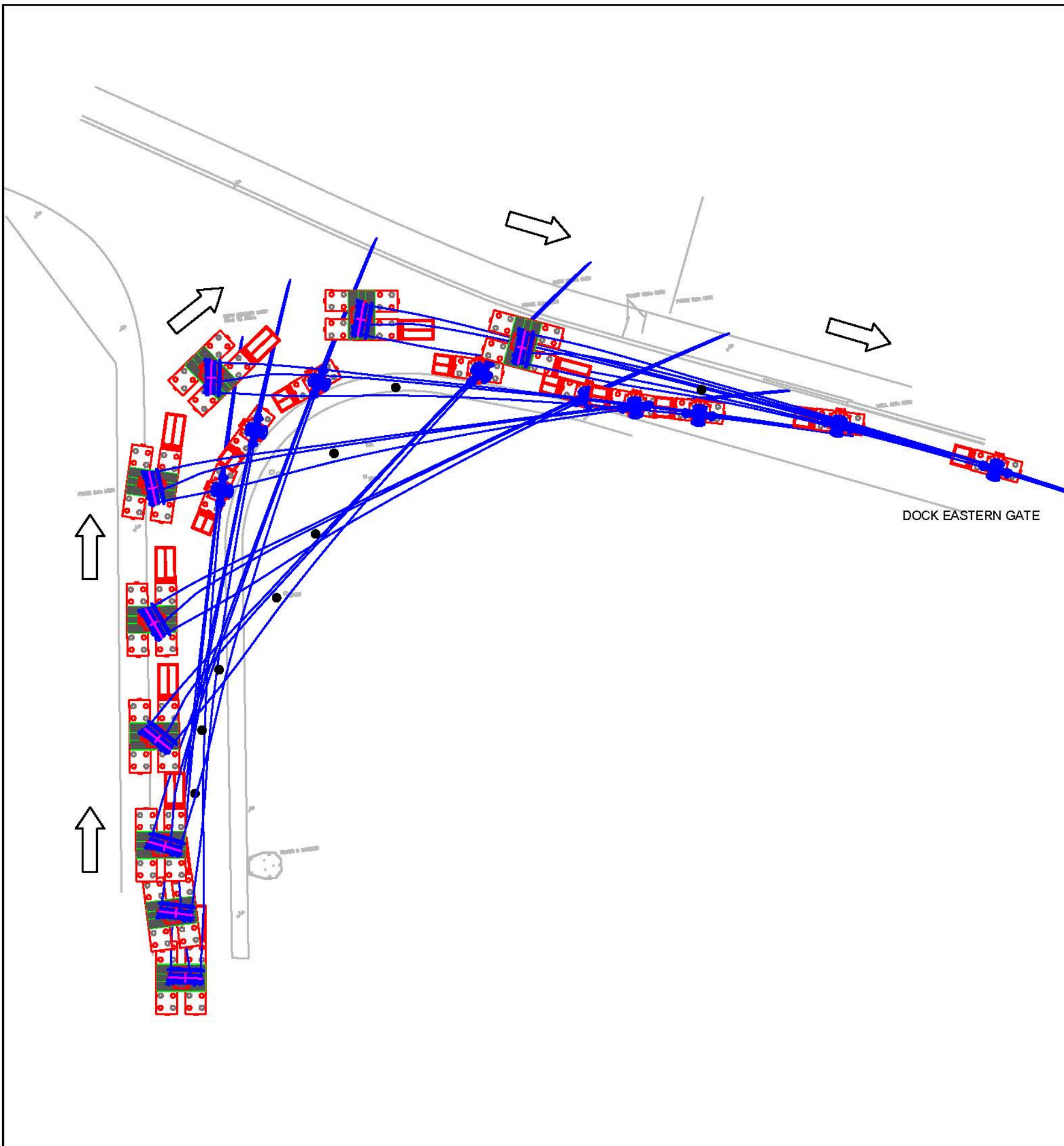










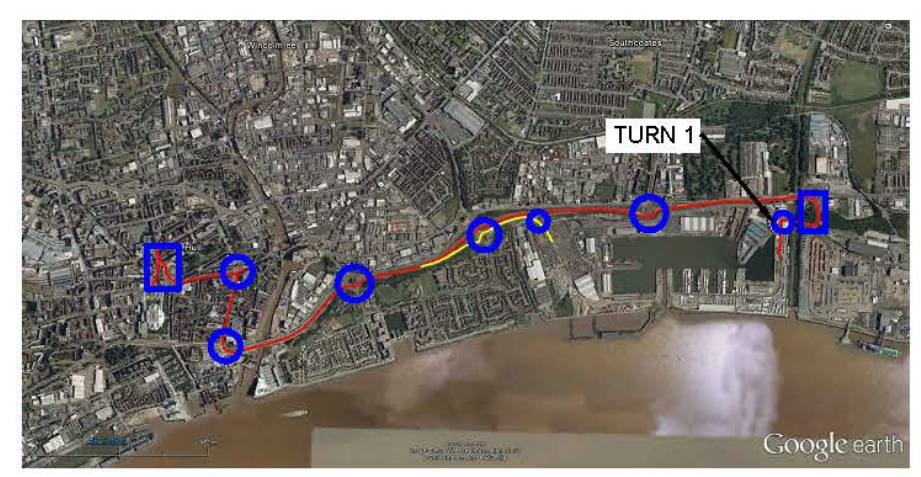
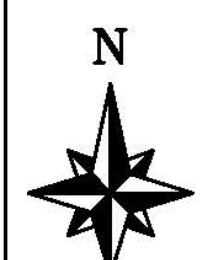


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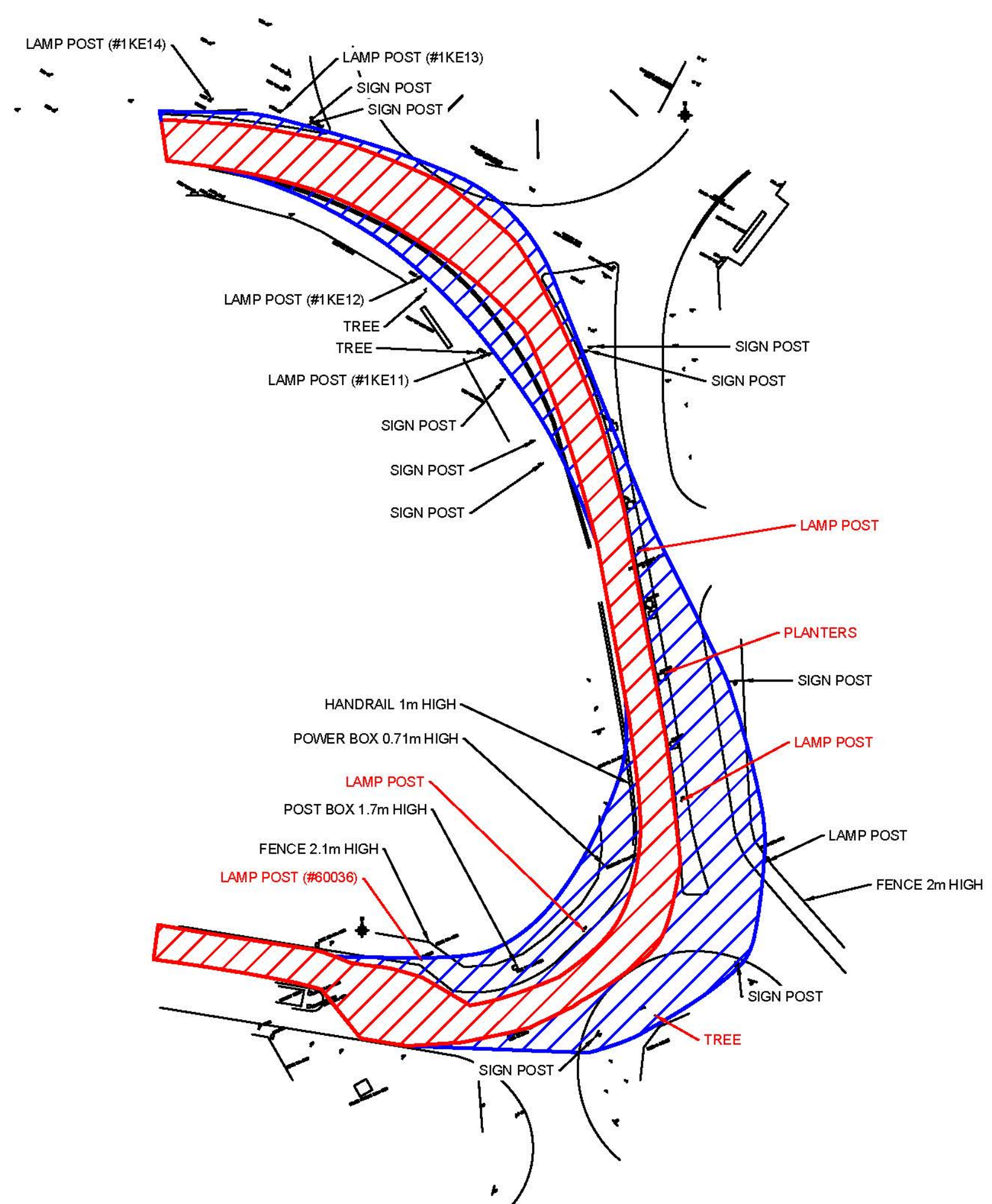
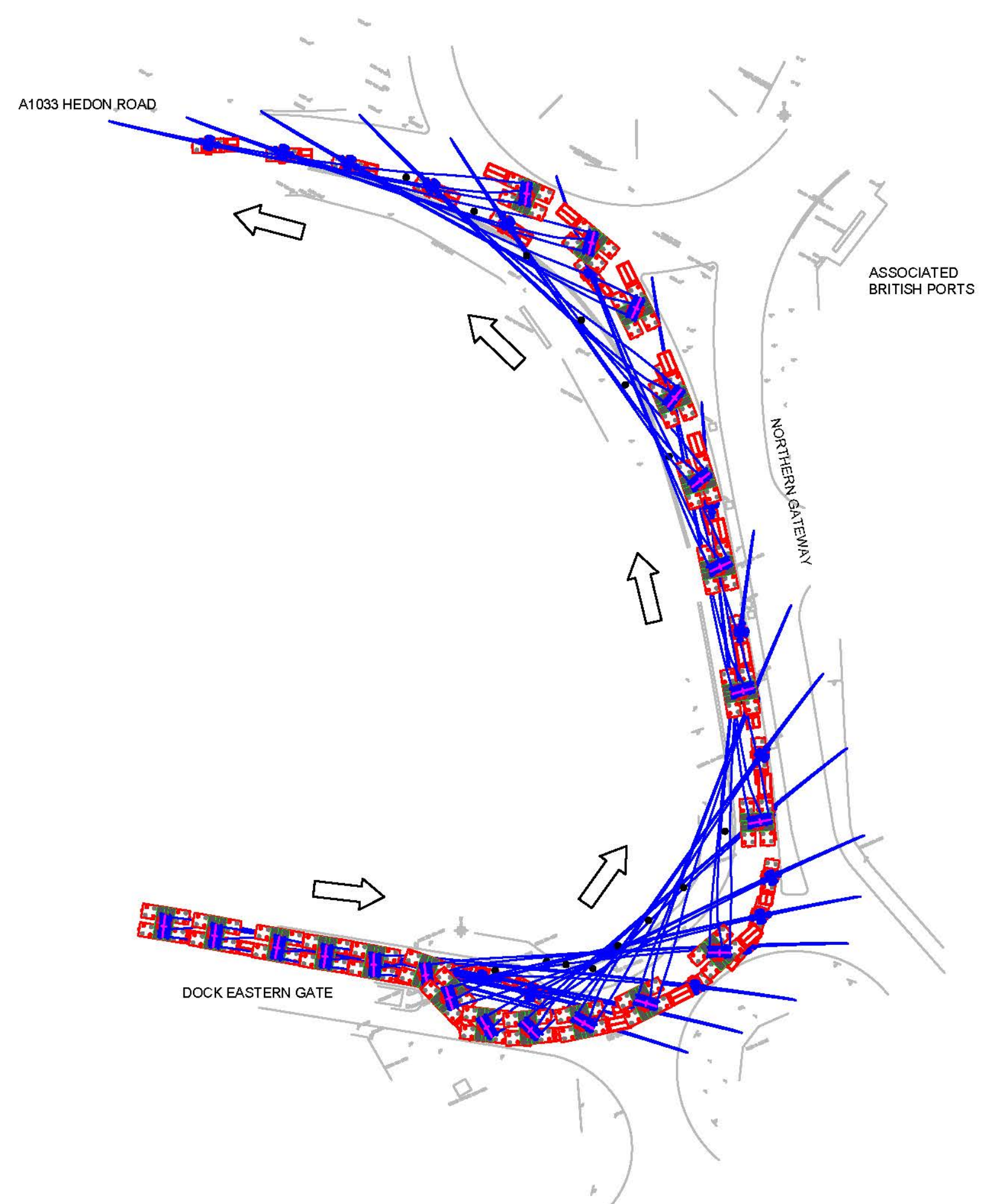
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Project Title		B75 ROUTE SURVEY REPORT		
Drawing Title		SWEEP PATH ANALYSIS - HULL CITY CENTRE TURN 1		
Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE		NTS	2 of 10
Project No.	Drawing No.	Rev.		
AA0971-04	DRW-AA0971-04-002	0		

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Legend:

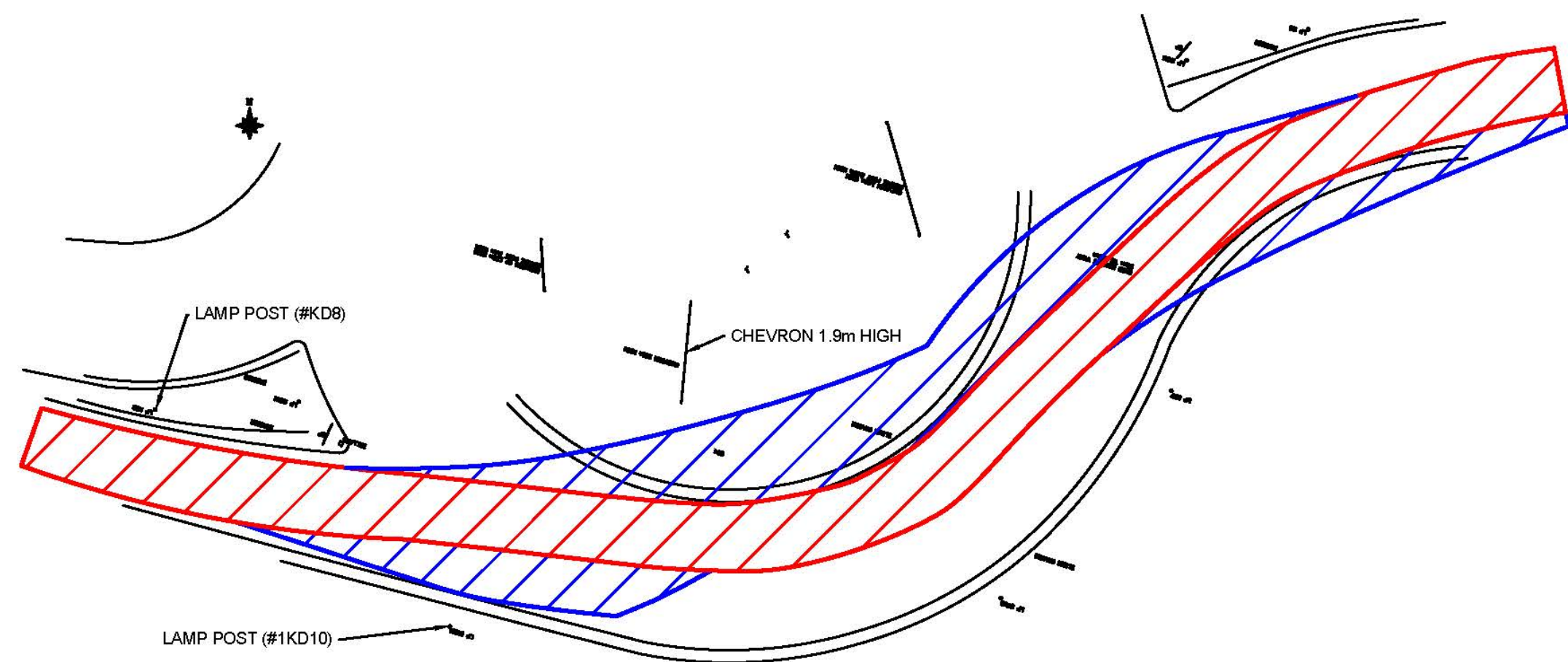
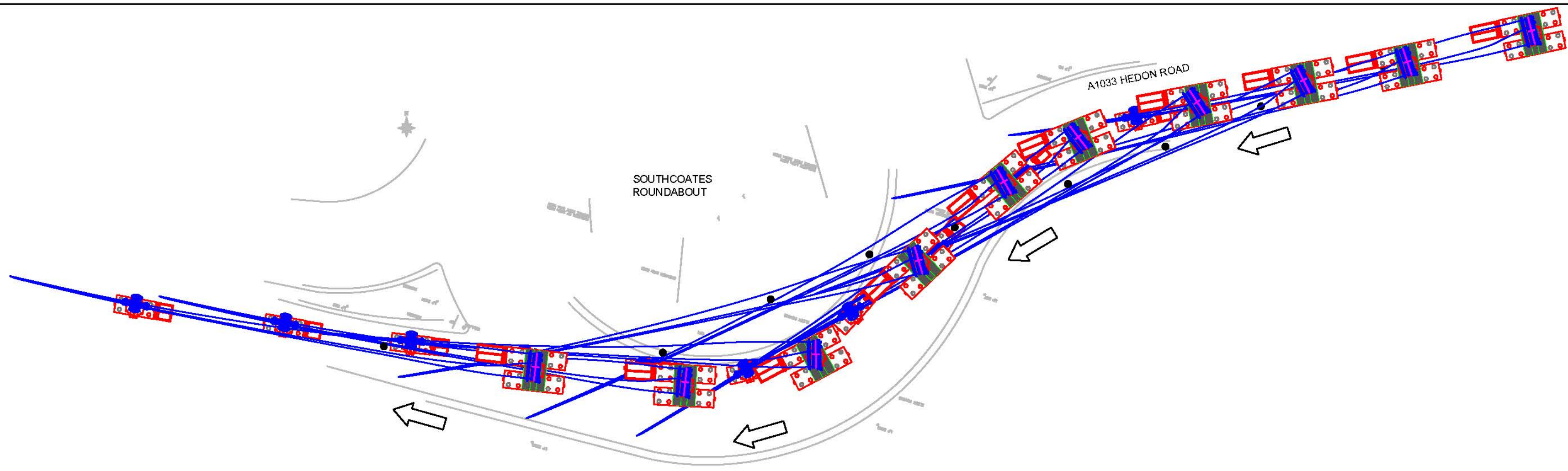
- [Red Hatched] - TRAILER PATH
- [Blue Hatched] - BLADE OVERSAIL

North Arrow: N

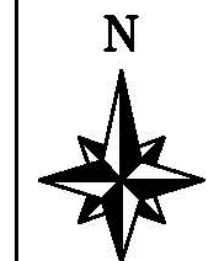
Location Map: TURN 2 (Aerial view with route highlighted)

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Drawing Title		SWEEP PATH ANALYSIS - HULL CITY CENTRE TURN 2		
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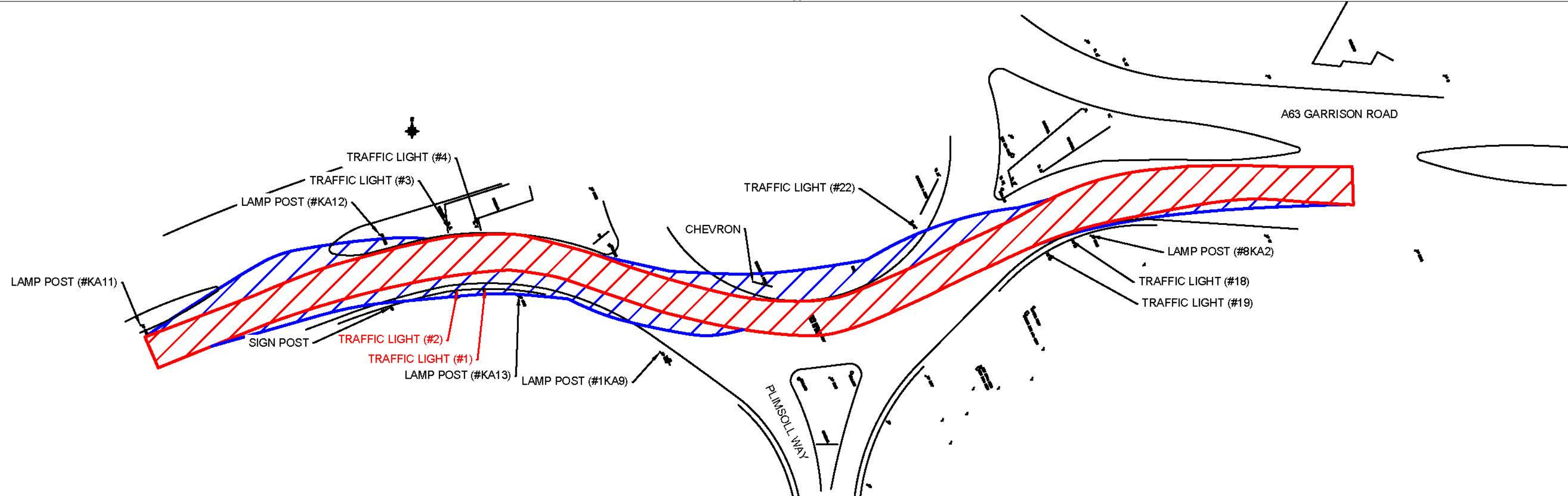


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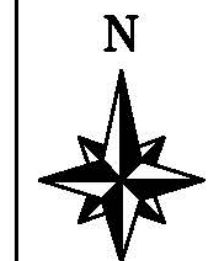
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Project Title: B75 ROUTE SURVEY REPORT				
Drawing Title: SWEEP PATH ANALYSIS - HULL CITY CENTRE TURN 3				
Date: 29/07/16	Drawn: BE	Checked:	Scale (A1): NTS	Sheet: 4 of 10
Project No: AA0971-04	Dwg: AA0971-04	Drawing No: DRW-AA0971-04-002	Rev: 0	



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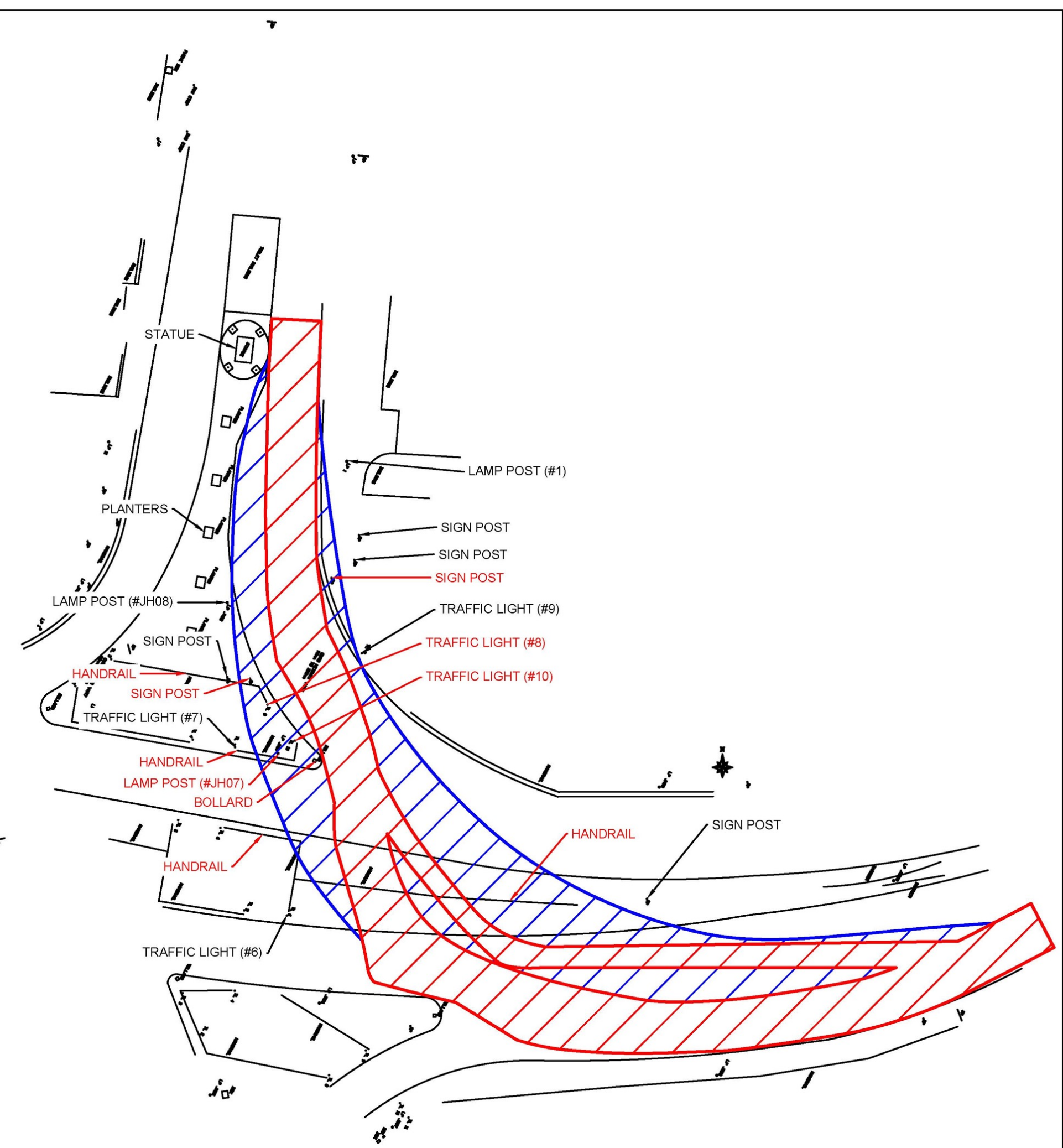
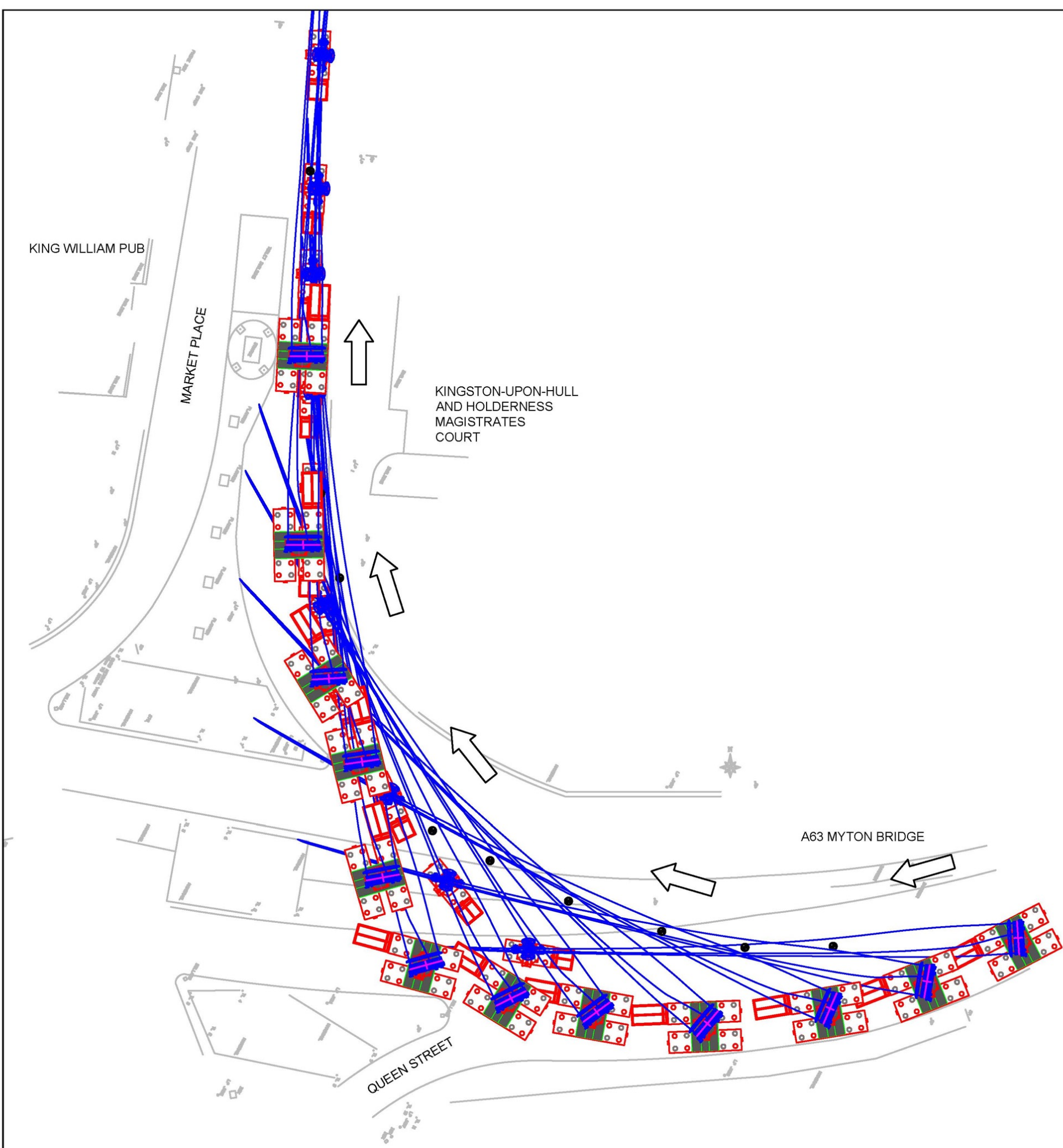


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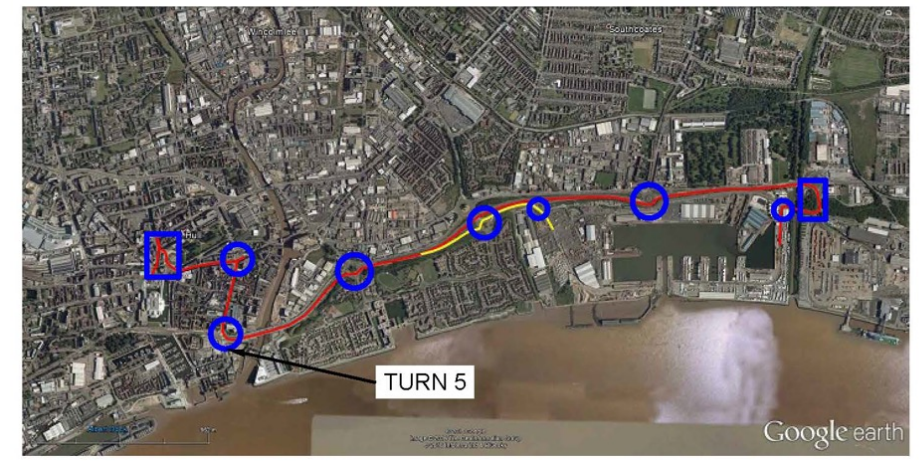
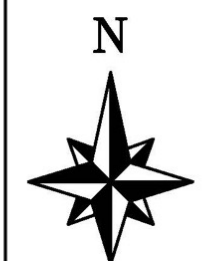


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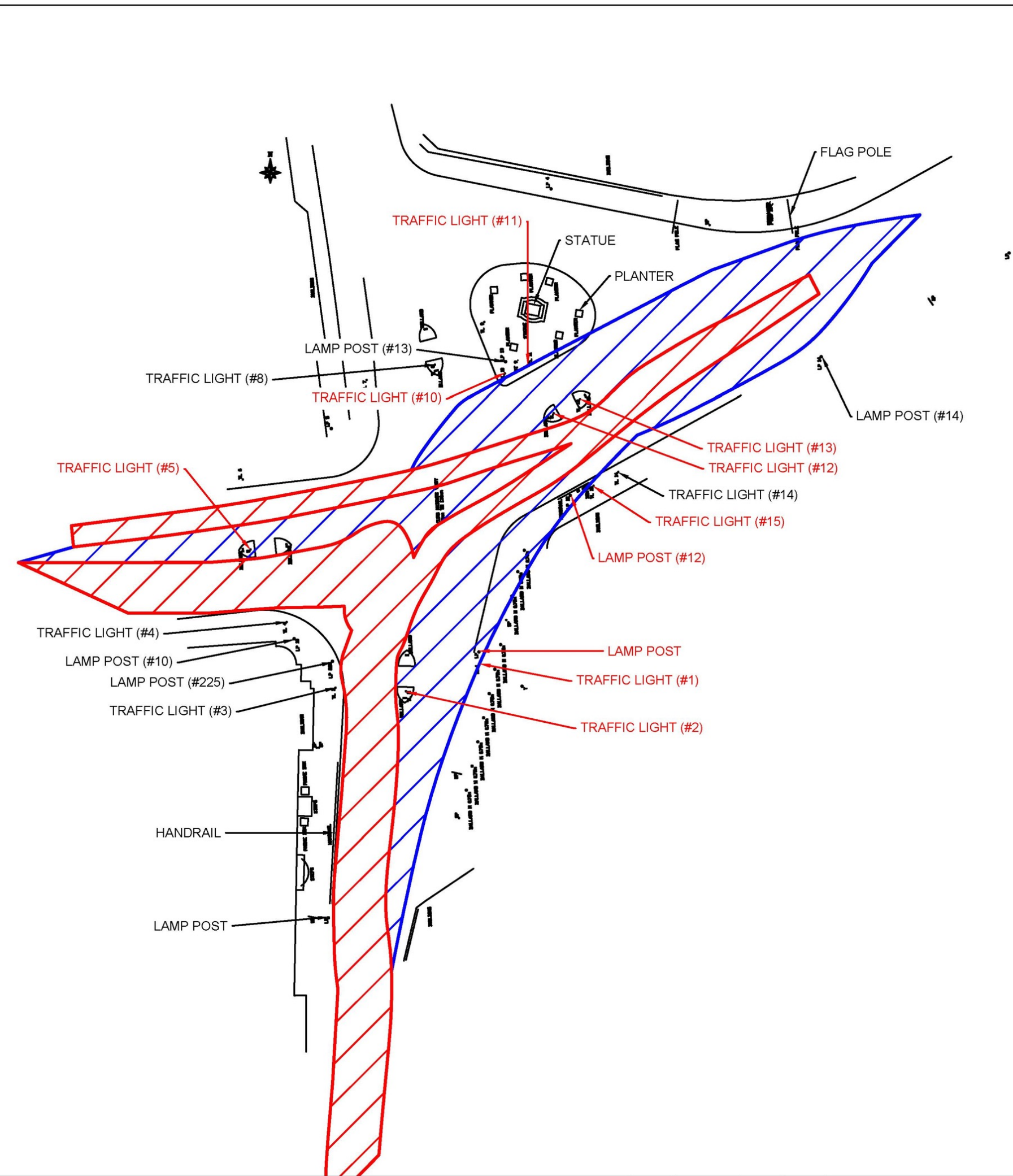
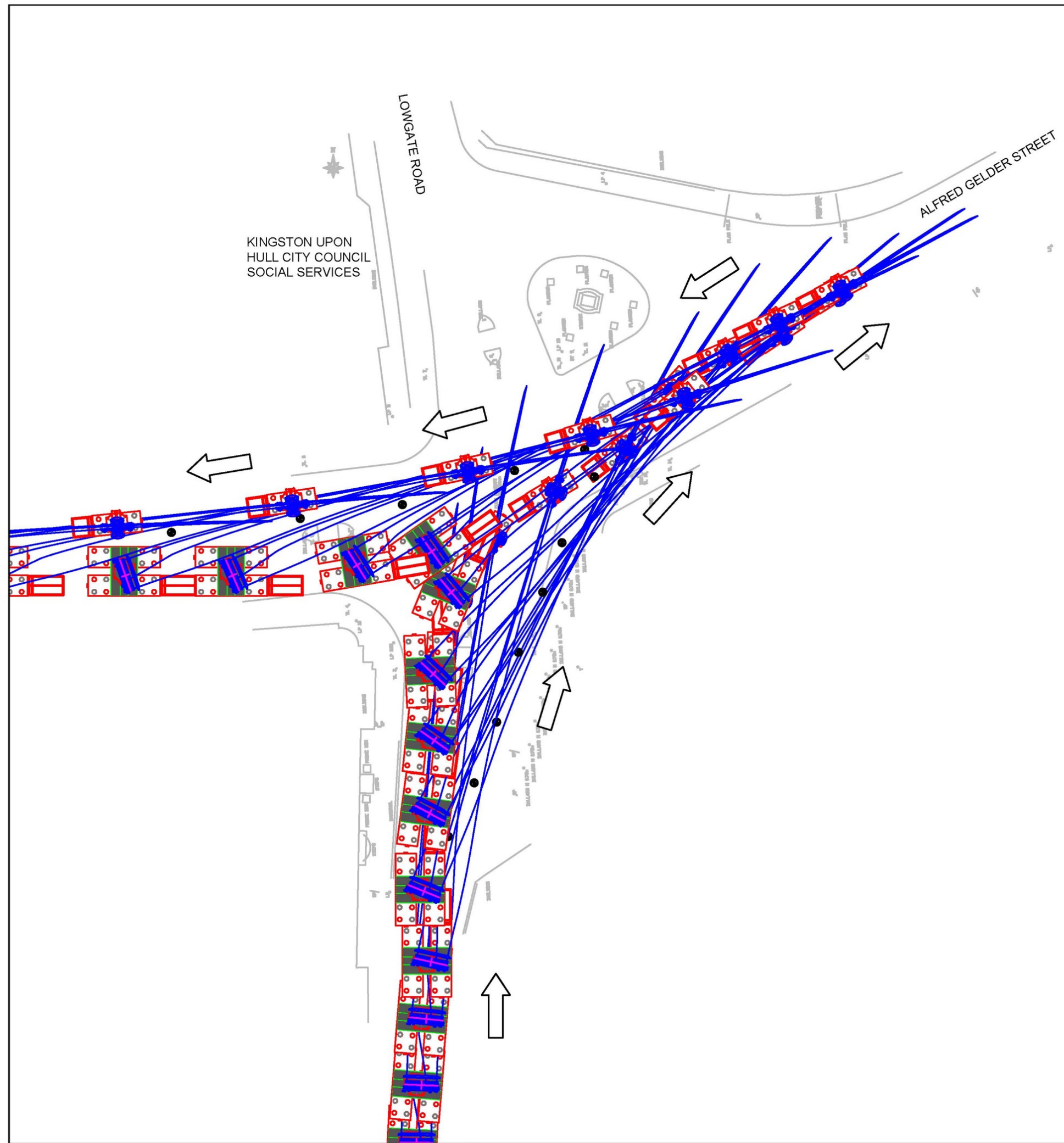
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Project No. dwg: AA0971-04	Drawing No. DRW-AA0971-04-002		Rev. 0	

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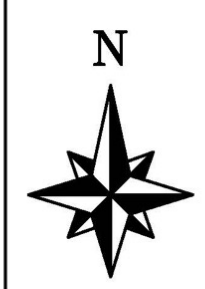


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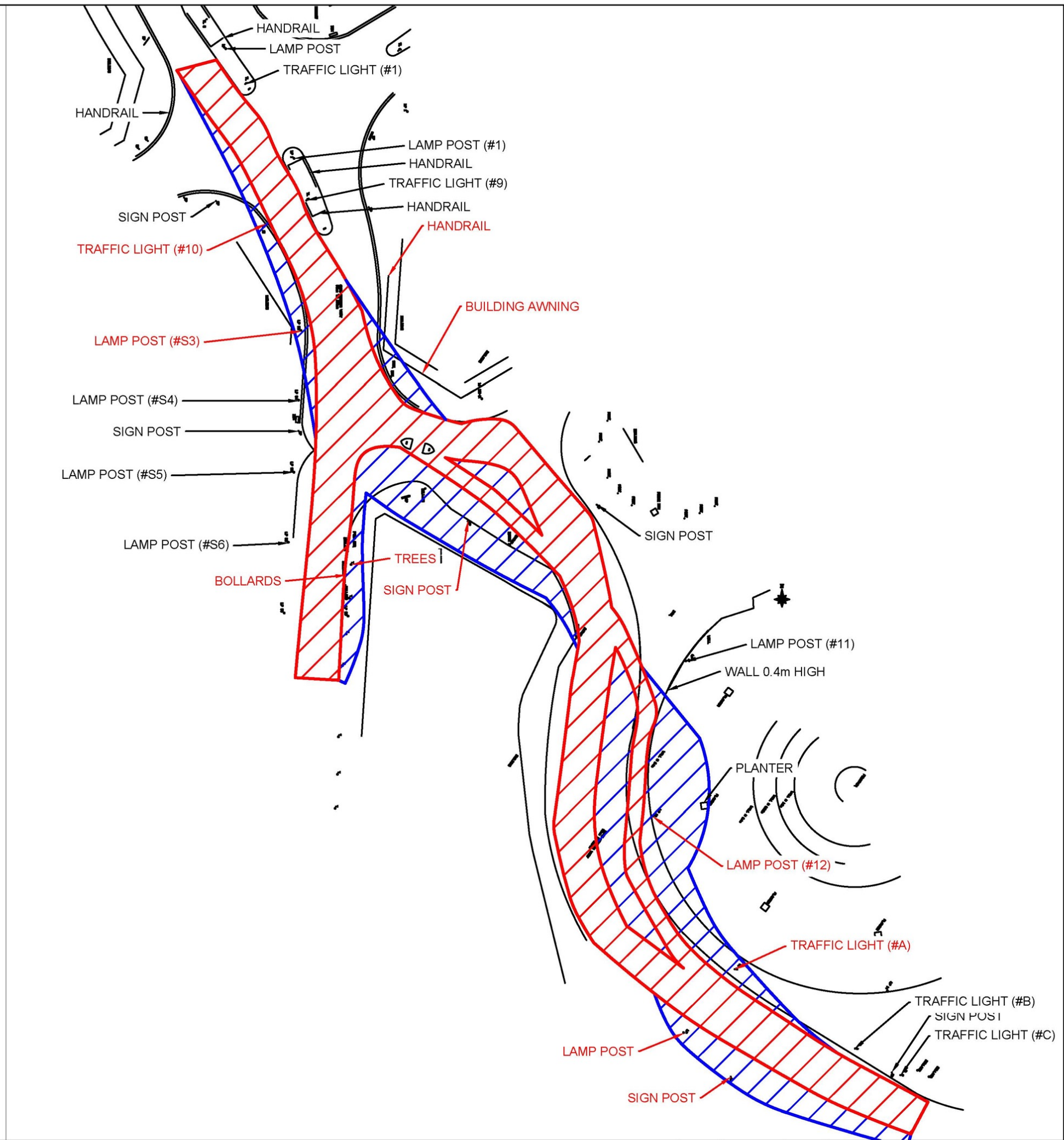
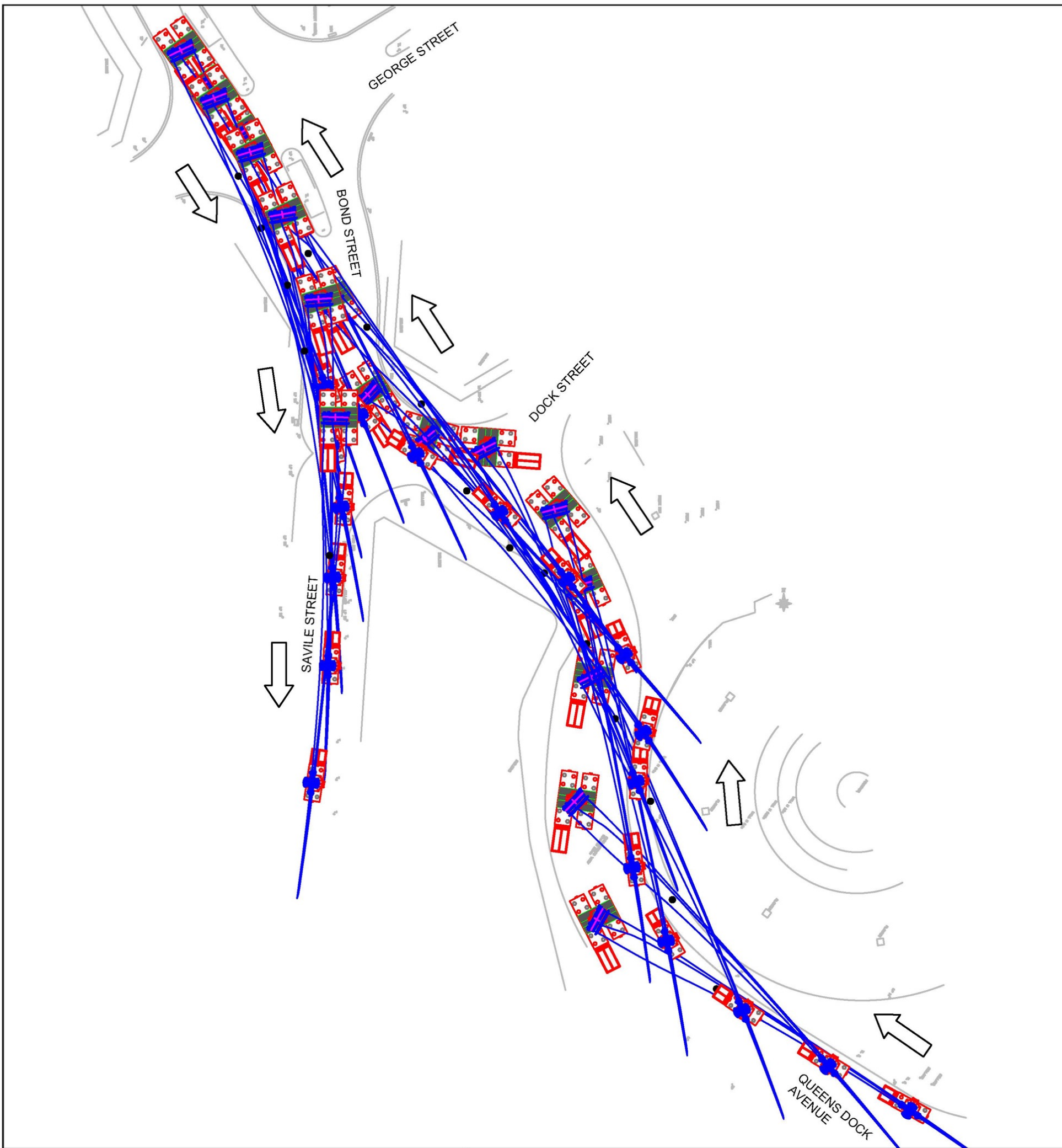
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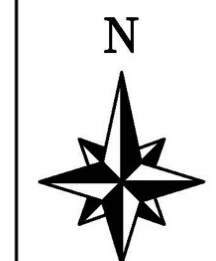
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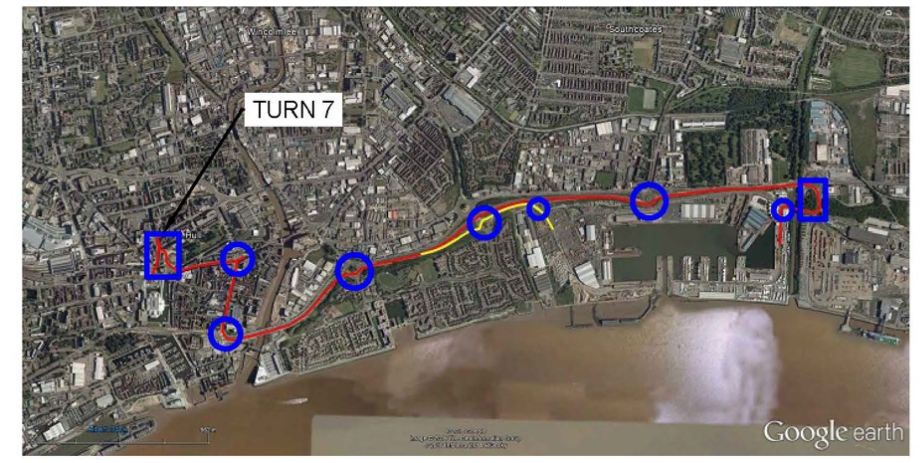
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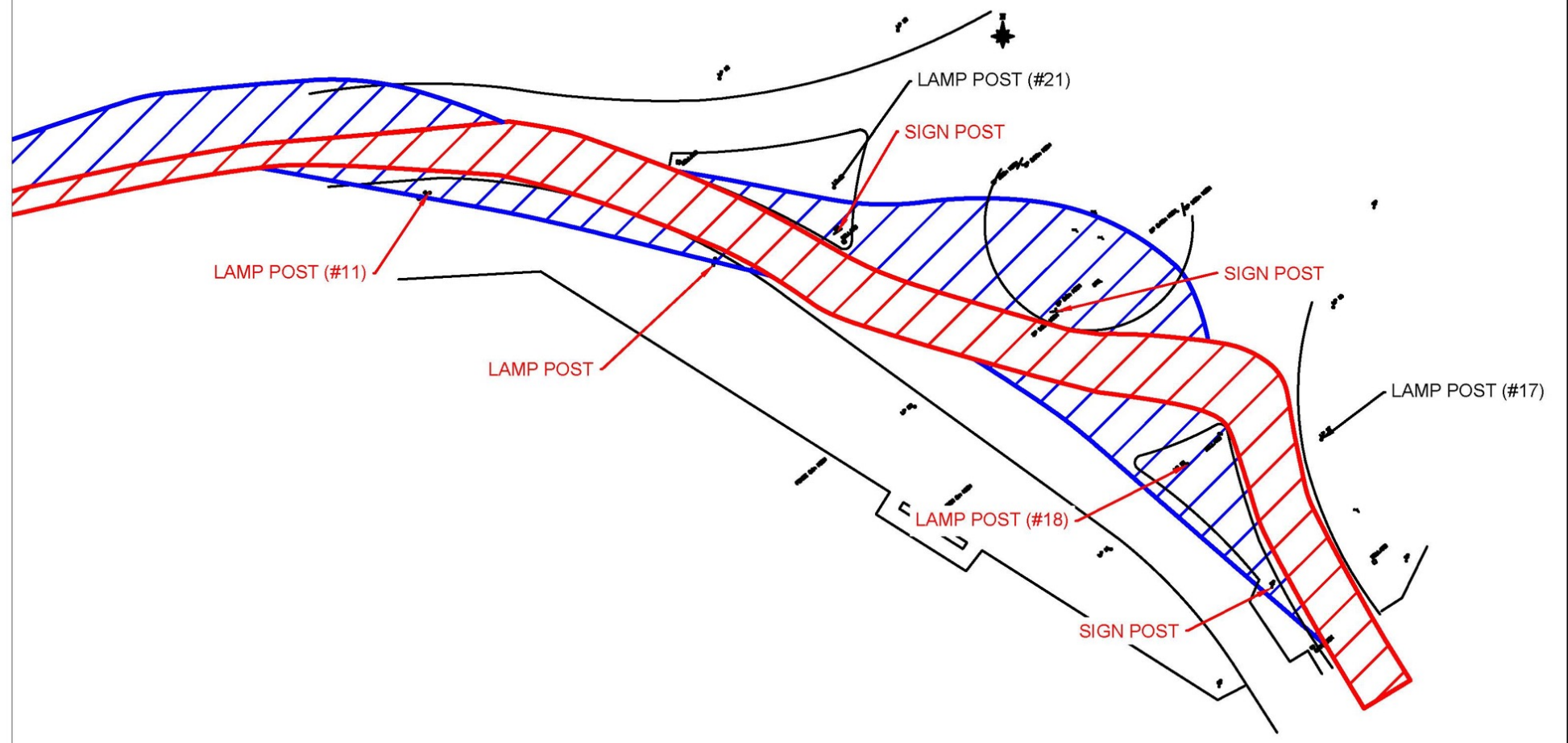
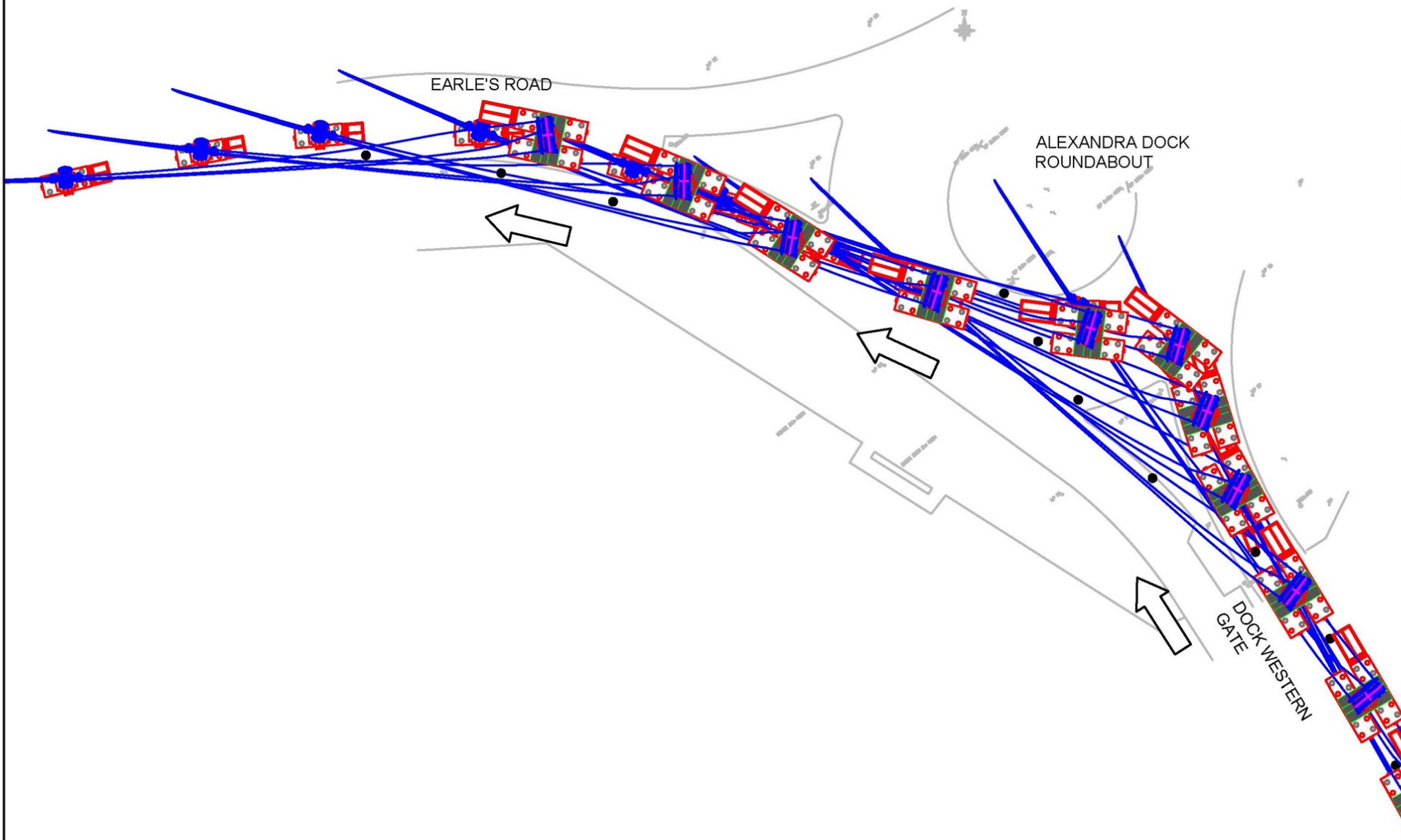


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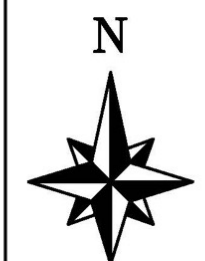



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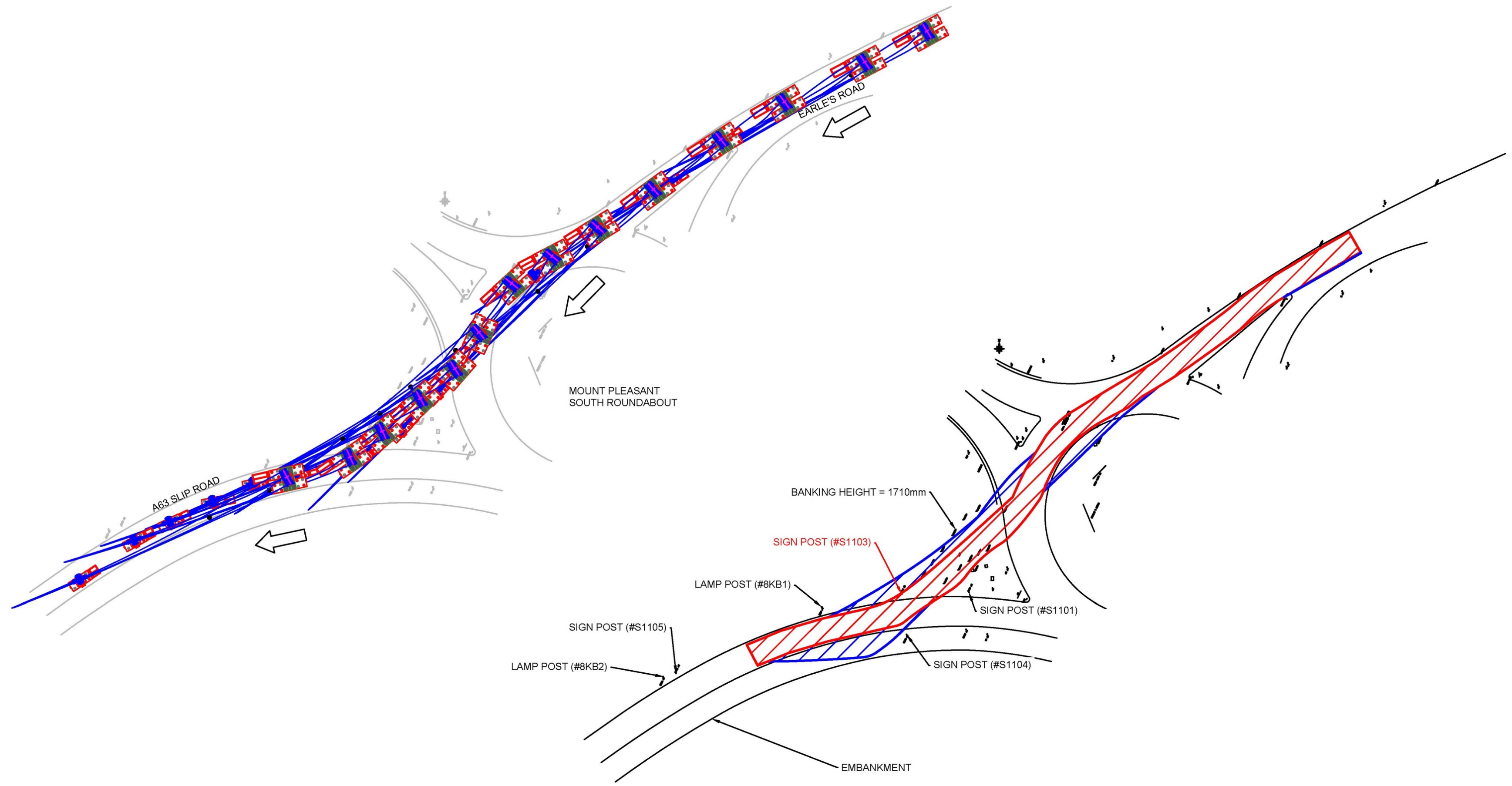


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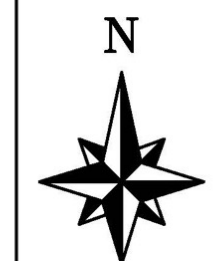
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Project No. dwg AA0971-04		Drawing No. DRW-AA0971-04-002		Rev. 0



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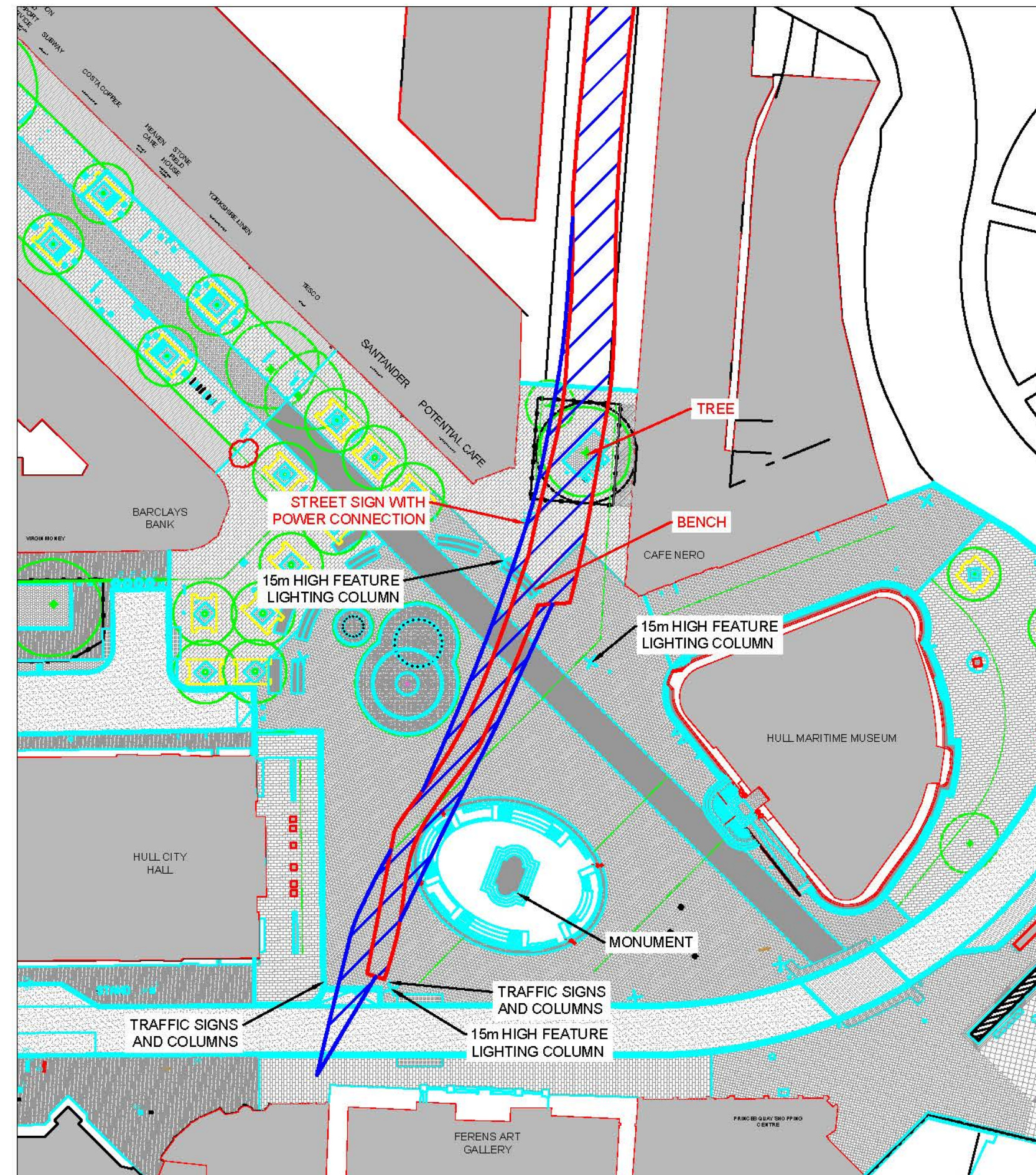
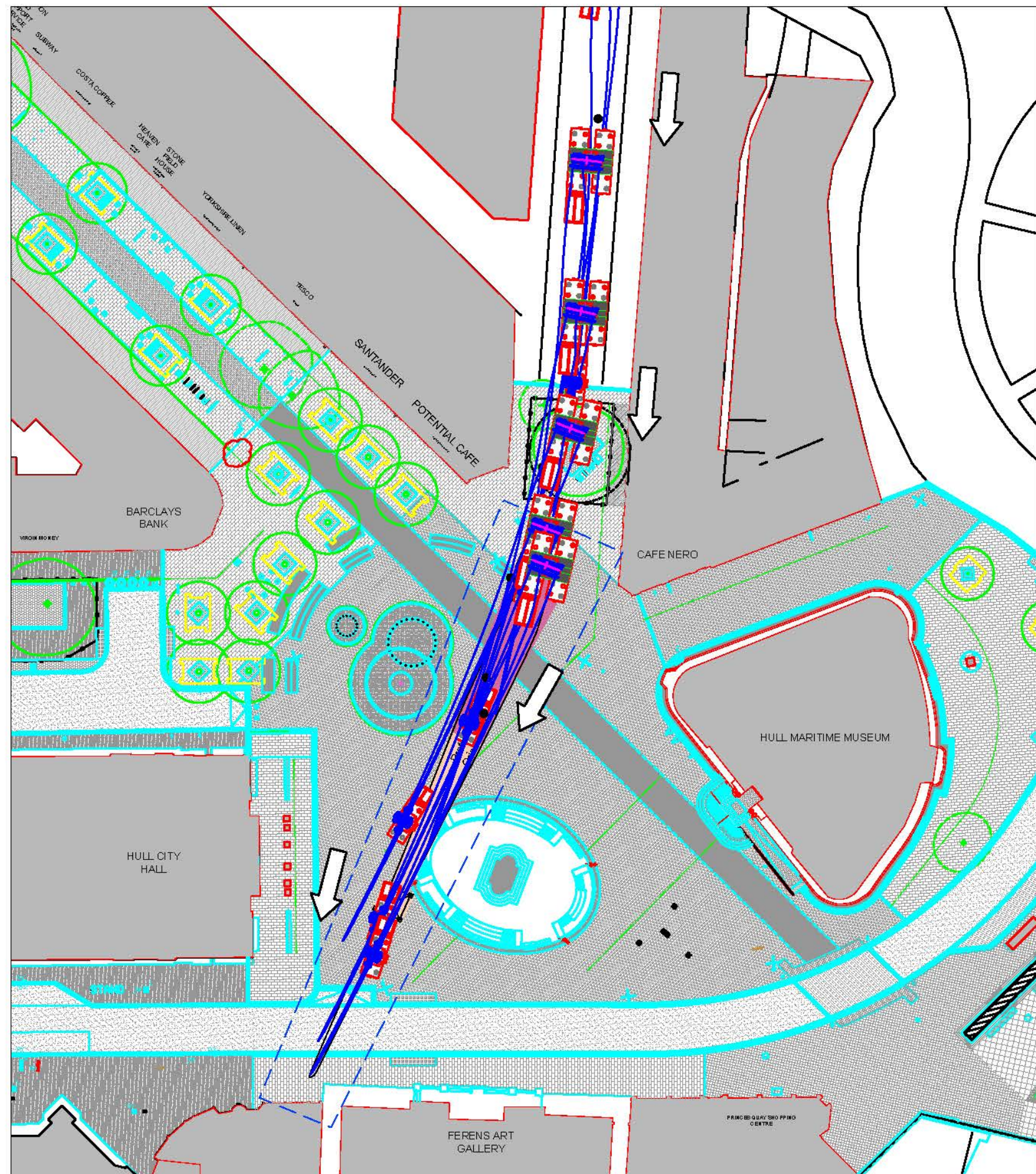


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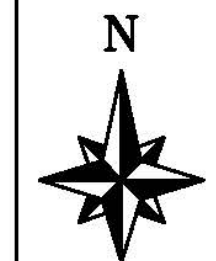


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Drawing Title		SWEPT PATH ANALYSIS - HULL CITY CENTRE ROUTE B - TURN 2		
Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE		NTS	10 of 10
Project No.	Drawing No.	Rev.		
AA0971-04	DRW-AA0971-04-002	0		



DRAWING NOTES:

- ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.
- ALL WEIGHTS ARE IN t (METRIC TONNES) UNLESS OTHERWISE STATED.
- ALL DETAILS ARE PROVISIONAL AND ARE SUBJECT TO CONFIRMATION.



TECHNICAL NOTES:

- TRAILER PATH
- BLADE OVERSAIL
- B75 BLADE TRANSPORT DIMENSIONS: 75590 x 4345 x 5348 mm (L x W x H) @ 26.1t
- FOR TRANSPORT ARRANGEMENT, SEE Dwg. No. DRW-AA0971-04-001
- STREET FURNITURE INDICATED IN RED MUST BE REMOVED.
- OTHER STREET FURNITURE IDENTIFIED MAY BE REQUIRED TO BE REMOVED.
- BLADE FINAL POSITION FROM RECEIVED Dwg. No. 249697-SK-001-A

0	29/07/16	BE		FIRST ISSUE
Rev	Date	Drawn	Check	Description
				GF19 (Issue 5)
		Abnormal Load Engineering Ltd. New Road, Hixon, Staffordshire, ST18 0PE, U.K. Tel: +44 (0) 1889 272 500 Fax: +44 (0) 1889 271 750 Web: www.ale-heavylift.com		
Client		SIEMENS		
Project Title		B75 ROUTE SURVEY REPORT		
Drawing Title		SWEPT PATH ANALYSIS BLADE FINAL POSITIONING		
Date	Drawn	Checked	Scale (A1)	Sheet
29/07/16	BE		NTS	1 of 1
Project No.		Drawing No.		Rev.
AA0971-04		DRW-AA0971-04-003		0

DO NOT SCALE IF IN DOUBT ASK The content of this drawing is confidential and must not be disclosed without the written permission of ALE. File Location: Z:\Public\Job Files\AA0000-1AA0971 - Siemens Hull - B75 Blades and Moulds\AA0971-04 - Siemens B75 Route Survey Report\Engineering\Drawings\DRW-AA0971-04-003-0 - SP - FI

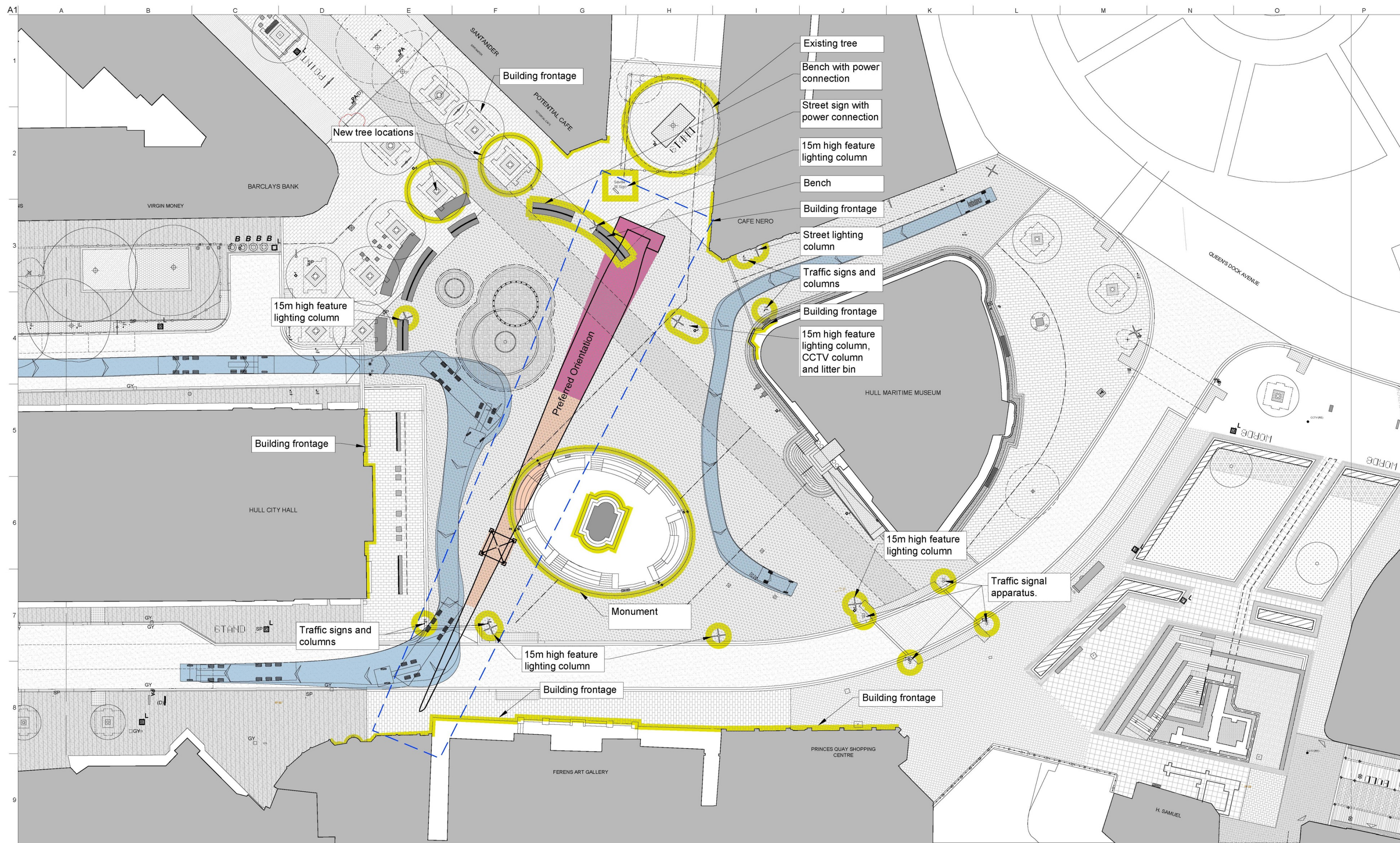
INSTALLATION

QUEEN VICTORIA SQUARE

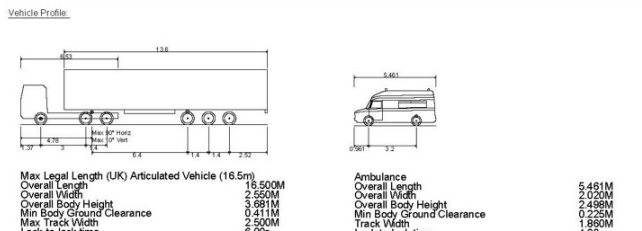
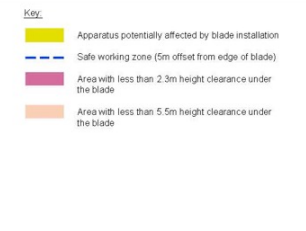








- Notes:**
1. Preliminary layout subject to detailed design including full CDM compliance, progress of Public Realm works and Local Authority approval.
 2. Two-way bus services to continue to operate along Car Lane. Bus gates to be implemented at locations indicated.
 3. Area shown to have less than 5.0m height clearance under the blade is measured from 0.0 CD from the edge of the blade at 100% wind. See Hull City Hall drawing ZYR.LCC.0 (Issue 2009/2010).
- Background drawing:**
- Area 12: Queen Victoria Square General Arrangement Plan (Drawing no: RPA 12 DR LA 0001 Rev. C3)
 - Area 12: Queen Victoria Square General Arrangement Plan (Drawing no: RPA 12 DR LA 0001 Rev. C3)
 - Area 12 Phasing Works (doc. ref: Hull CCPR-PHAS06)



ISSUED FOR DISCUSSION PURPOSES

A	22/07/16	JH	RB	RB
Issue	Date	By	Chkd	Appd

Client
Hull UK City of Culture 2017

Job Title
Hull Zephyr

Drawing Title
Preferred Arrangement
Queen Victoria Square

ARUP

Admiral House Rose Wharf
76 East Street Leeds LS9 8EE
Tel +44 (0)113 242 8488 Fax +44 (0)113 242 8573
www.arup.com

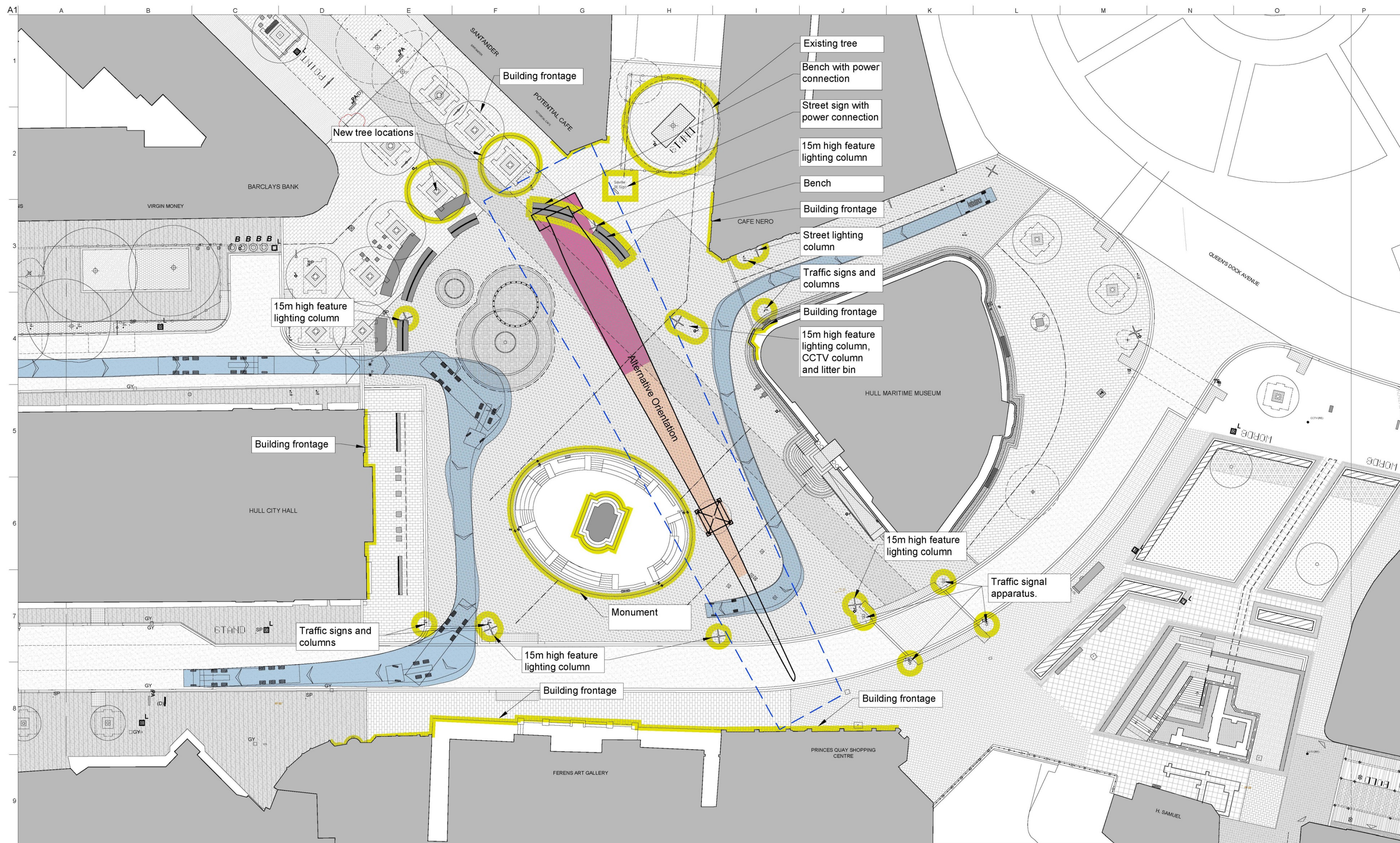
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1:250

Plot ID
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Drawing Status
For information

Job No 249697	Drawing No 249697-SK-001	Issue A
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PREFERRED ARRANGEMENT



- Notes:**
1. Preliminary report subject to detailed design including full CDM compliance, progress of Public Realm works and Local Authority approval.
 2. Two-way bus services to continue to operate along Carr Lane. Bus gates to be implemented at locations indicated.
 3. Areas shown to have less than 5.5m height clearance under the blade is measured from 50 (0)mm from the edge of the blade at 'top' end. See Hull City Council drawing 2195-CO-01 (dated 26/06/2016).
- Background drawing:**
- Area 12: Queen Victoria Square Overall Arrangement Plan (drawing no. 07M-12-01-0001 Rev. C3)
 - Area 12: Queen Victoria Square Overall Arrangement Plan (drawing no. 07M-12-01-0001 Rev. C3)
 - Area 12: Planning Works (doc. ref. Hull COPR-PHAS.08)

- Key:**
- Yellow: Apparatus potentially affected by blade installation
 - Blue dashed line: Safe walking zone (5m offset from edge of blade)
 - Pink: Area with less than 2.3m height clearance under the blade
 - Orange: Area with less than 5.5m height clearance under the blade

Vehicle Profile:

Vehicle Type	Max. Legal Length (UK) Articulated Vehicle (16.5m)	Ambulance
Overall Length	13.500M	5.651M
Overall Body Height	3.200M	3.200M
Min. Body Clearance	0.411M	0.275M
Max. Track Width	2.500M	1.800M
Lock-to-lock time	8.000s	8.000s
Lock-to-lock turning Radius	8.000m	8.000m

ISSUED FOR DISCUSSION PURPOSES

Issue	Date	By	Chkd	Appd
A	22/07/16	JH	RB	RB
First Issue				

Client
Hull UK City of Culture 2017

Job Title
Hull Zephyr

Drawing Title
Alternative Arrangement
Queen Victoria Square

ARUP

Admiral House Rose Wharf
76 East Street Leeds LS9 8EE
Tel +44 (0)113 242 8498 Fax +44 (0)113 242 8573
www.arup.com

Scale at A1 1:250

Plot ID 332A5802-7A30-458D-AA34-98AC3DF4F804

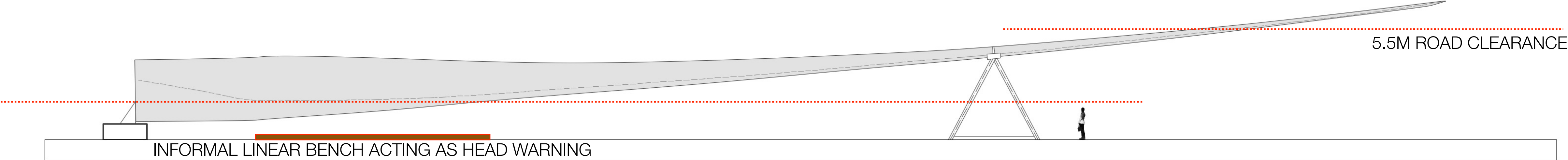
Drawing Status

For information

Job No 249697	Drawing No 249697-SK-002	Issue A
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ALTERNATIVE ARRANGEMENT

LONG ELEVATION



ROOT SUPPORT

TIP SUPPORT

THE TWO SUPPORTS SIT ON PROTECTIVE PADS DIRECTLY ONTO THE NEW PAVED SURFACES.

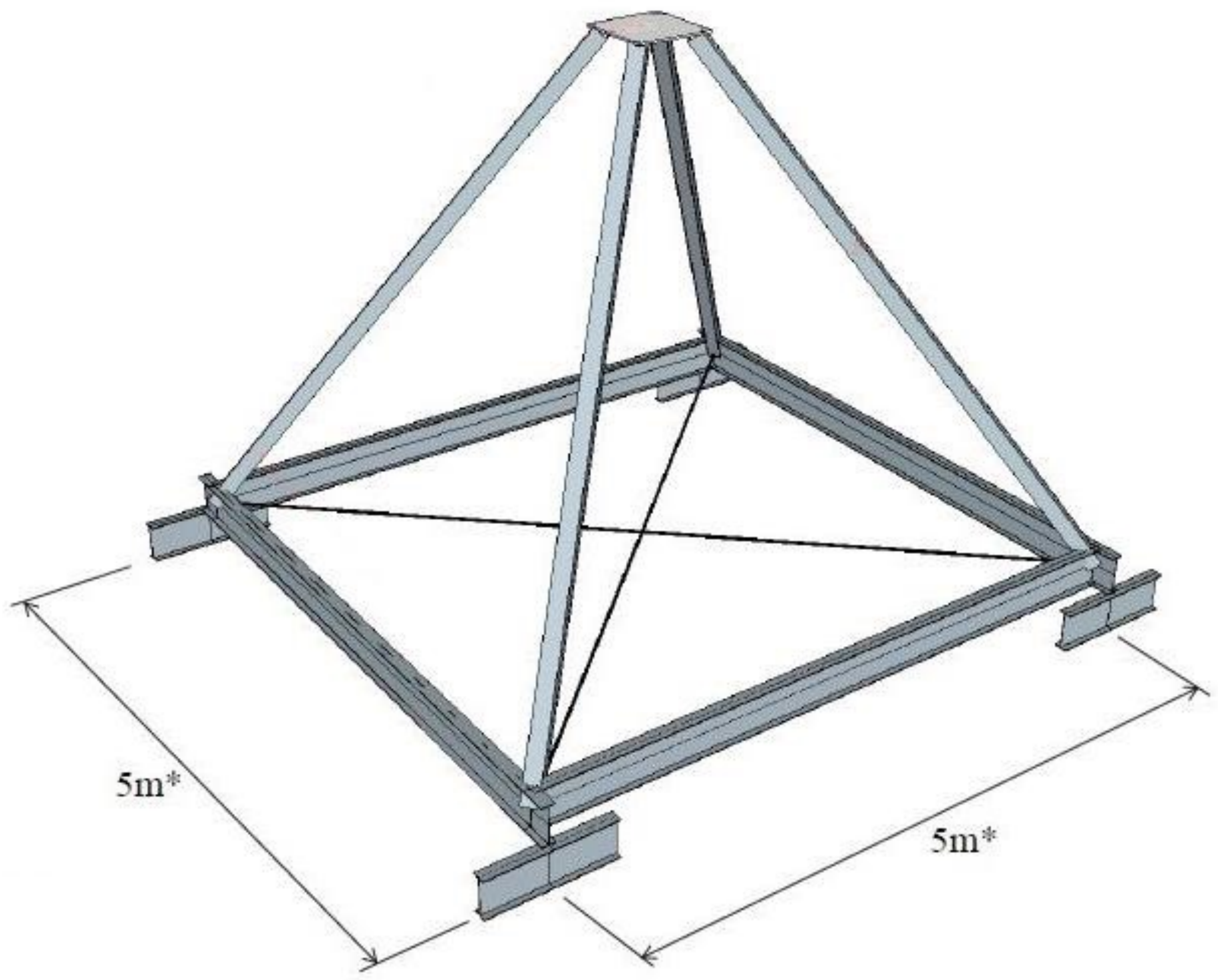
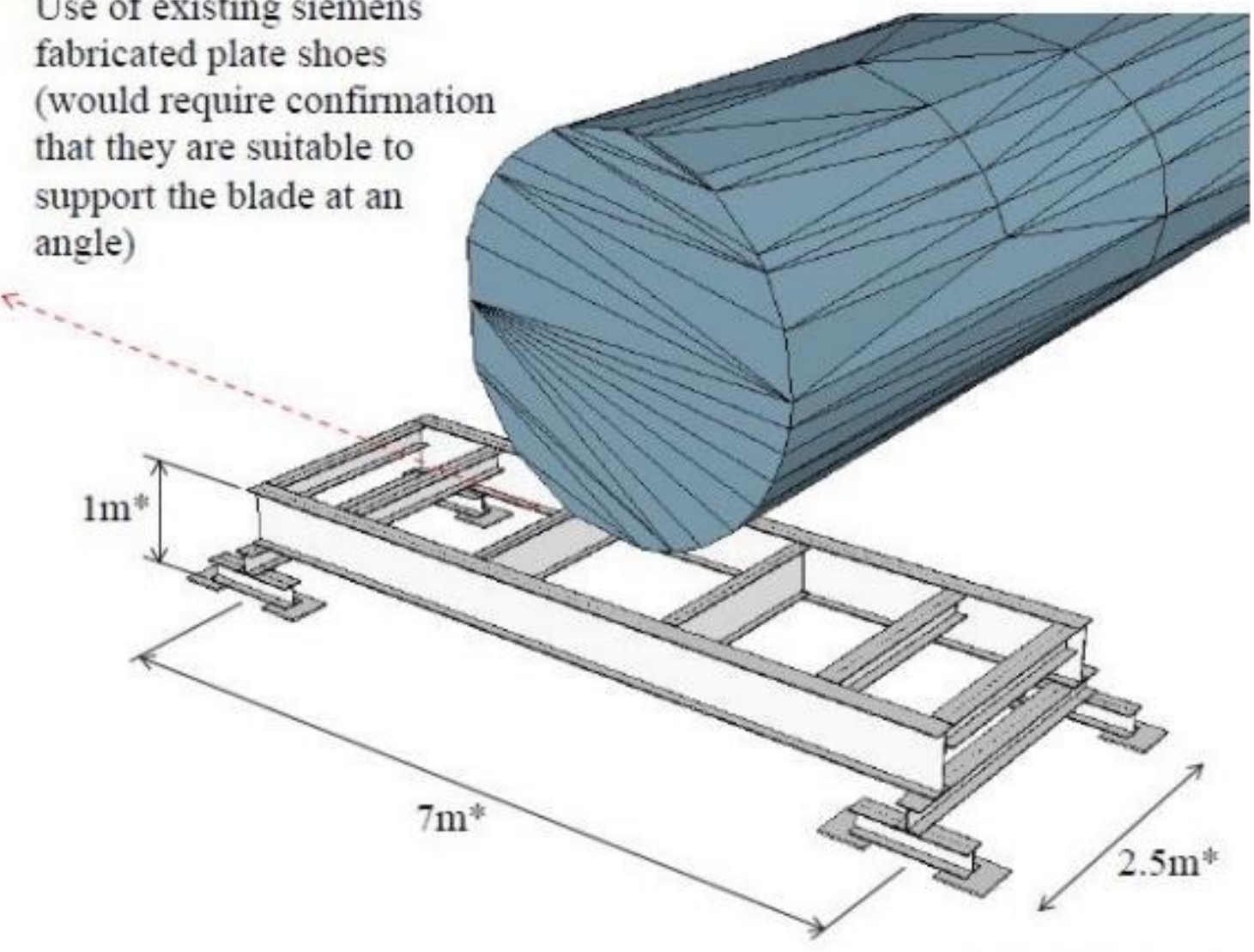


PRE-FABRICATED STEELWORK STRUCTURES AT ROOT & TIP END INCORPORATING THE STANDARD FIXINGS USED BY SIEMENS.

SUPPORT CONCEPT



Use of existing siemens fabricated plate shoes (would require confirmation that they are suitable to support the blade at an angle)



PROJECT

PERMISSIONS

PLANNING CONSENT

EVENT LICENSE (OR SIMILAR)

ABNORMAL LOADS LICENSE

REMOVAL/REINSTATEMENT OF STREET APPARATUS

REGULATORY SIGNS AND SAFETY BARRIERS

POLICE ESCORT

TRAFFIC MANAGEMENT/TEMPORARY TRAFFIC REGULATION ORDERS

OVERSAIL LICENSE

OWNERSHIP & MAINTENANCE

OWNERSHIP AND LIABILITIES COVERED IN THE AGREEMENT BETWEEN
SIEMENS PLC AND HULL 2017 (ENTERPRISES) LTD

INSURANCE

SECURITY PRESENCE

SECURE DESIGN

MAINTENANCE – CLEANING, REPAIRING AND REPAINTING

PROGRAMME

Critical Path Activities	2016					2017	
	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Presentation to Project Board	◆						
Go/No Go decision by Project Board	→◆						
Design of Supports		→◆					
Fabricator Procurement		→◆					
Fabrication of Supports			→◆				
Pre-installation – Mock Up				→◆			
Pre-installation – Socketing of Street Furniture					→◆		
Completion of Queen Victoria Square Public Realm Works						◆	
Installation						◆	
Removal							◆

PROGRAMME

	QUEEN VICTORIA SQUARE	SIEMENS FACILITY	TRANSPORT	
	COMPLETION OF SITE PREPARATION WORKS			
	ISSUE OF DETAILED INSTALLATION PROGRAMME	ISSUE OF DETAILED INSTALLATION PROGRAMME		
	OPERATIONAL TEAM BRIEFING	OPERATIONAL TEAM BRIEFING		
06:00	SITE SECURED	BLADE PREPARED FOR TRANSPORT		
	PROTECTIVE PLATES INSTALLED			
			GANGS COMMENCE STREET-FURNITURE REMOVAL	
06:30	CRANES POSITIONED		BLADE LEAVES SIEMENS UNDER POLICE ESCORT	
08:30	STEEL SUPPORTS POSITIONED		BLADE LEAVES A63 (HIGHWAYS ENGLAND PROPERTY)	08:19 SUNRISE
			GANGS REPLACE STREET-FURNITURE	
10:00			BLADE ARRIVES IN QUEEN VICTORIA SQUARE	
	BLADE LIFTED INTO POSITION			
	BLADE SECURED ON SUPPORTS			
	SAFETY CHECK			
	BARRIER BENCHES POSITIONED			
	CRANES DEMOBILISED & REMOVED FROM SITE			
	CLEAN UP			
14:00	HAND OVER			

RESPONSIBILITIES

HULL 2017	SIEMENS PLC
TAKE RESPONSIBILITY FOR THE WIND TURBINE BLADE DURING INSTALLATION	LOAN THE BLADE
SECURE ALL NECESSARY PLANNING AND OTHER NECESSARY PERMISSIONS	TRANSPORT THE BLADE TO THE SITE AND LIFT THE BLADE ONTO THE SUPPORTS (INCLUDING THE REMOVAL AND REPLACEMENT OF STREET FURNITURE)
UK HEALTH & SAFETY COMPLIANCE	LIFT THE BLADE OFF THE SUPPORTS AND TRANSPORT THE BLADE OF SITE (INCLUDING THE REMOVAL AND REPLACEMENT OF STREET FURNITURE)
TO PREPARE THE SITE AND PROVIDE SUITABLE SUPPORTS FOR THE BLADE	
MANAGEMENT AND MAINTENANCE	

RISKS

DELAY TO COMPLETION OF QVS

PUBLIC INTERFERENCE DURING INSTALLATION/REMOVAL

PEOPLE COLLISION WITH BLADE

CLIMBING

STRAPS SECURING BLADE

DAMAGE TO PUBLIC REALM

FIRE

NEW YEARS EVE

HIGH WINDS DURING INSTALLATION & REMOVAL

BUDGET EXCEEDED

POLITICAL OBJECTORS

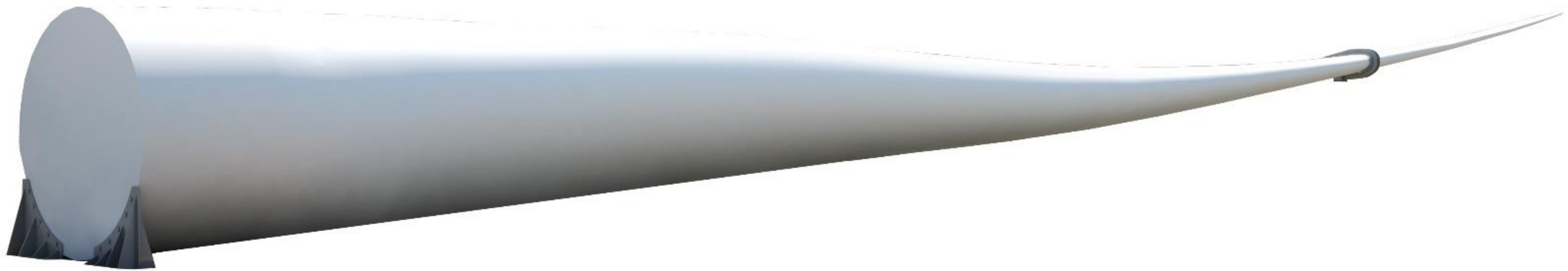
SURPRISE ELEMENT

PLANNING CONSENT IS NOT GRANTED

PLANNING CONSENT DELAYED

LEGAL ENFORCEMENT ACTION

TO CONCLUDE







SIEMENS

ARUP