

TOWER CRANES NORTH AMERICA CONFERENCE & RECEPTION

Brasfield and Gorrie, LLC.

Improving Tower Crane Operations with Virtual Design and Construction

CREATED AND ORGANIZED BY



PARTNER ASSOCIATION



Improving Tower Crane Operations with Virtual Design and Construction

**TOWER
CRANES**
NORTH AMERICA
CONFERENCE & RECEPTION



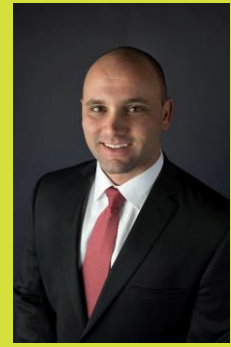
**BRASFIELD
& GORRIE**
GENERAL CONTRACTORS

Improving Tower Crane Operations with Virtual Design and Construction



RUSS GIBBS

Director of Innovation



JR MORAN

Director of Crane Operations





ONE OF THE
LARGEST
PRIVATELY HELD
CONSTRUCTION
FIRMS IN THE
NATION

PURPOSE

Building exceptional people, trusting relationships, great projects, and strong communities

VALUES

Safety
Performance
Integrity
Respect
Innovation
Teamwork

MARKET SECTORS

Aerospace
Commercial
Education
Energy
Government
Healthcare
Hospitality
Industrial
Infrastructure
Mission Critical
Multifamily
Senior Living
Sports/Entertainment
Water



est.

1964

54 years in business



0.42

EMR



2,800

employees









200+

active jobsites





Key Facts

-  125+ LEED® projects
45+ seeking certification
-  220+ LEED Accredited Professionals
and LEED Green Associates
-  EMR: 0.42
-  Qualified to work in 50 states
-  Projects from \$1,000 to \$700 million
-  Average project size is \$14 million



Rankings and Awards

2017 - 2018

- #1 Top Contractor
by *ENR Southeast*, 2017
- #1 General Contractor
by *ENR Southeast*, 2017
- #4 Healthcare General Contractor
by *Modern Healthcare*, 2018
- #27 Top 400 Contractors
by *Engineering News-Record*, 2018

2016

- #2 Green Contractor by *ENR Southeast*



Financial Strength

- Revenue **\$2.8 billion in 2017**
- Projected revenue **\$3.48 billion in 2018**
- Bonding capacity **\$4 billion**
exceeding **\$400 million/project**

B&G EQUIPMENT AND SUPPLY

A DIVISION OF BRASFIELD & GORRIE, LLC

CRANE & HOIST FLEET



24

TOWER CRANES



5

CRAWLER CRANES



4

HYDRAULIC CRANES

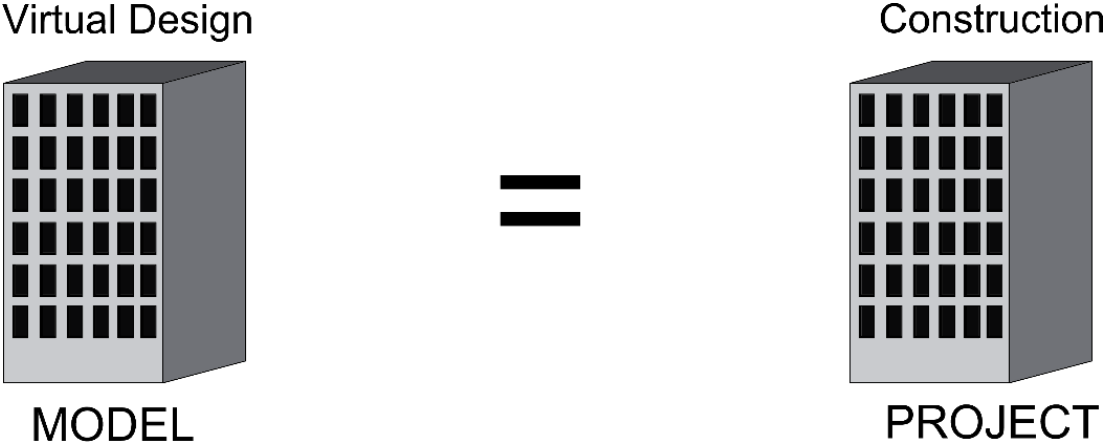


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HOISTS

Virtual Design and Construction – Defining a Process

What is the Goal?



BIM – Building Information Modeling

A process that recreates the physical construction environment through the use of 3D modeling.

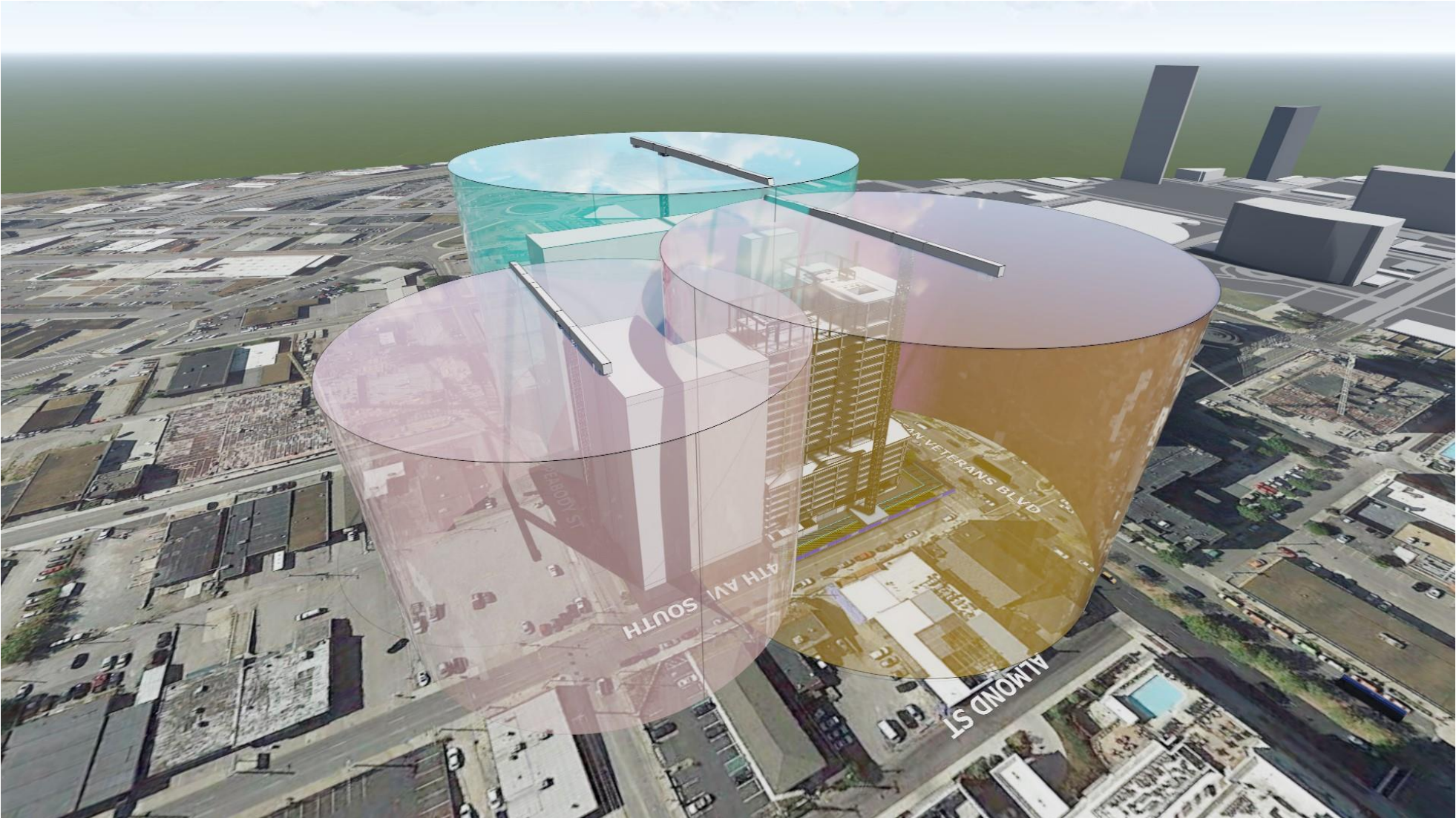
Virtual Design and Construction – Defining a Process

Initial Understanding – “Pretty Picture”



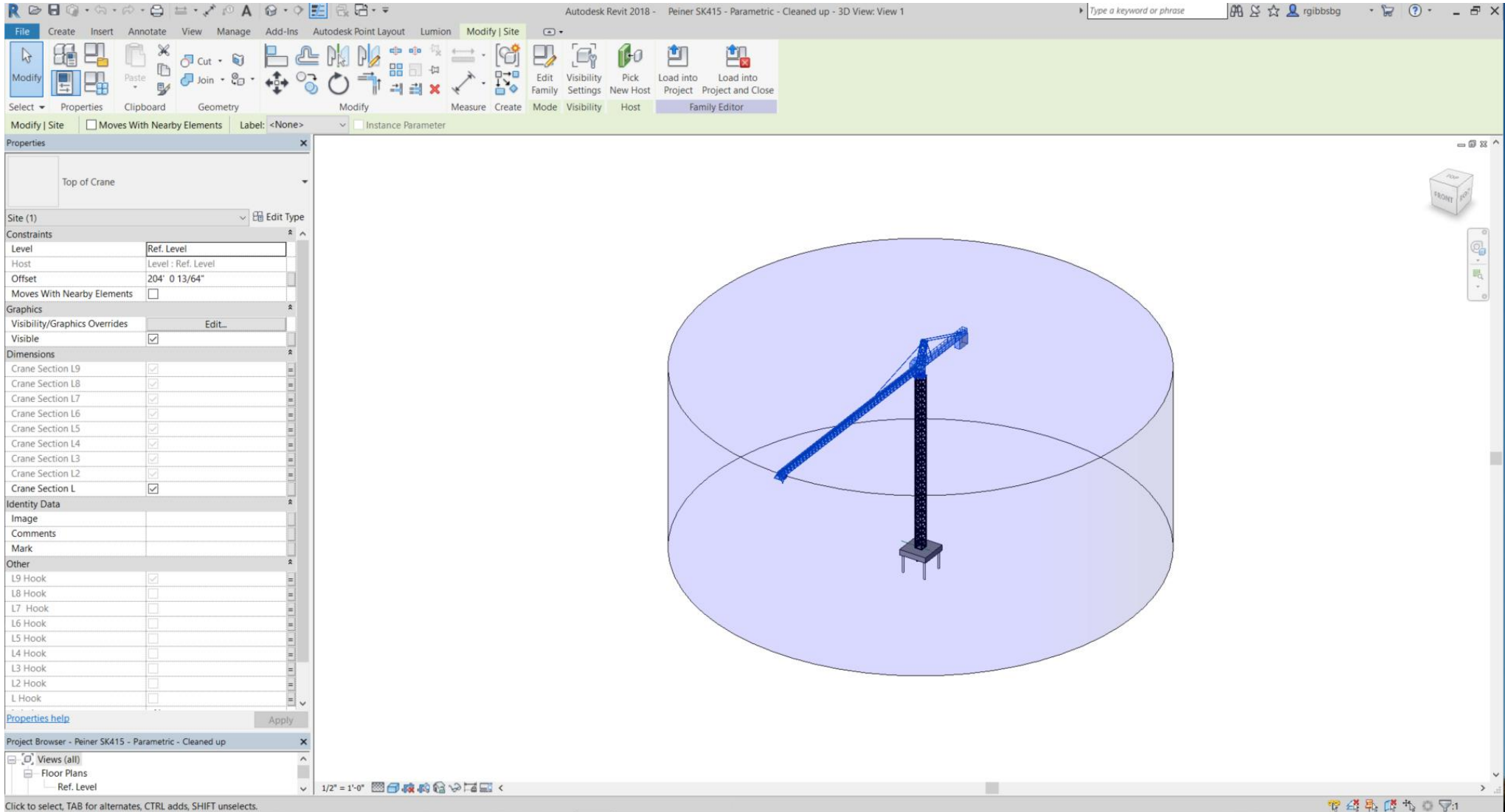
Virtual Design and Construction – Defining a Process

Increased Accuracy with Improved Visuals



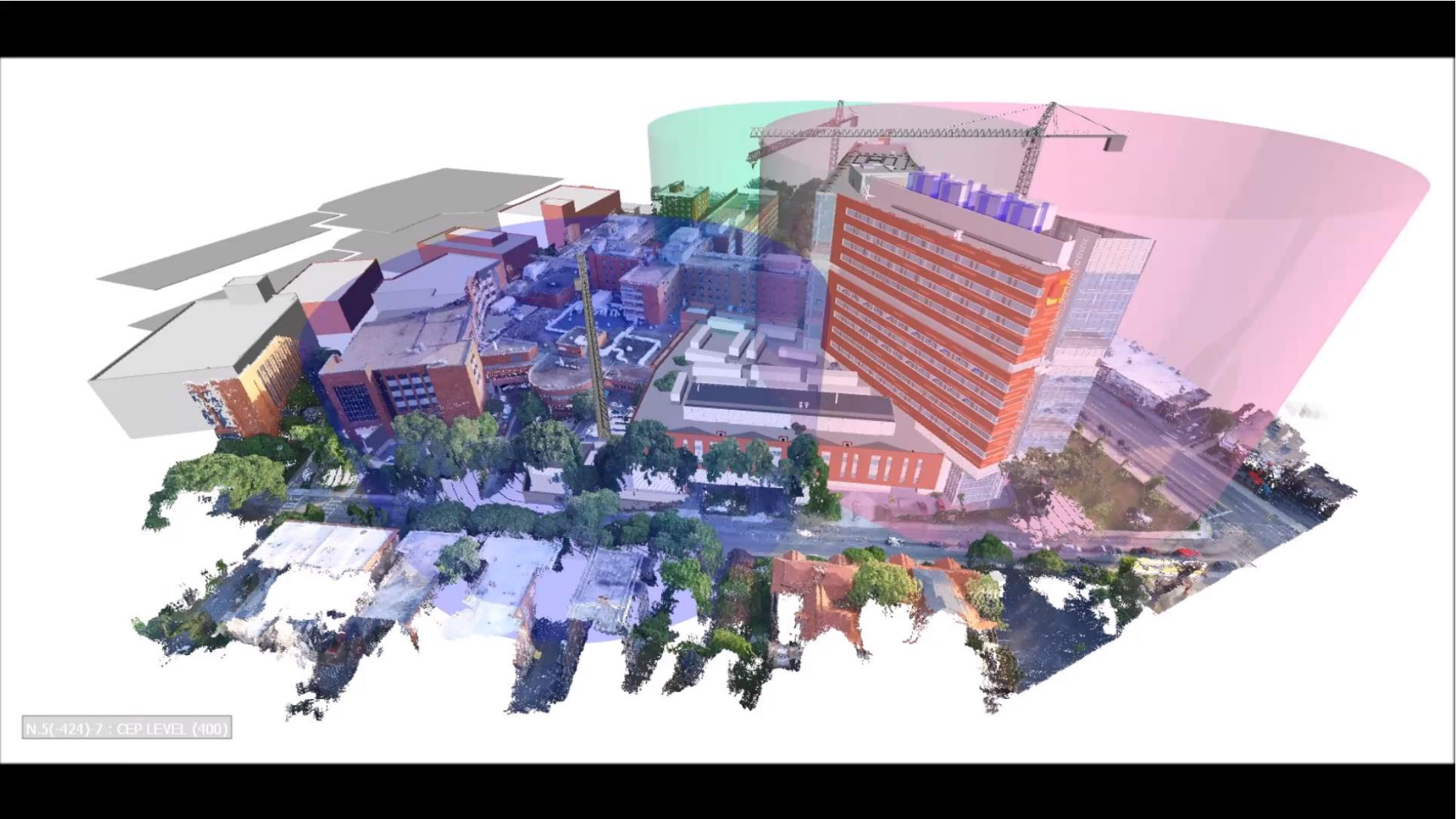
Virtual Design and Construction – Defining a Process

Putting BIM into Practice



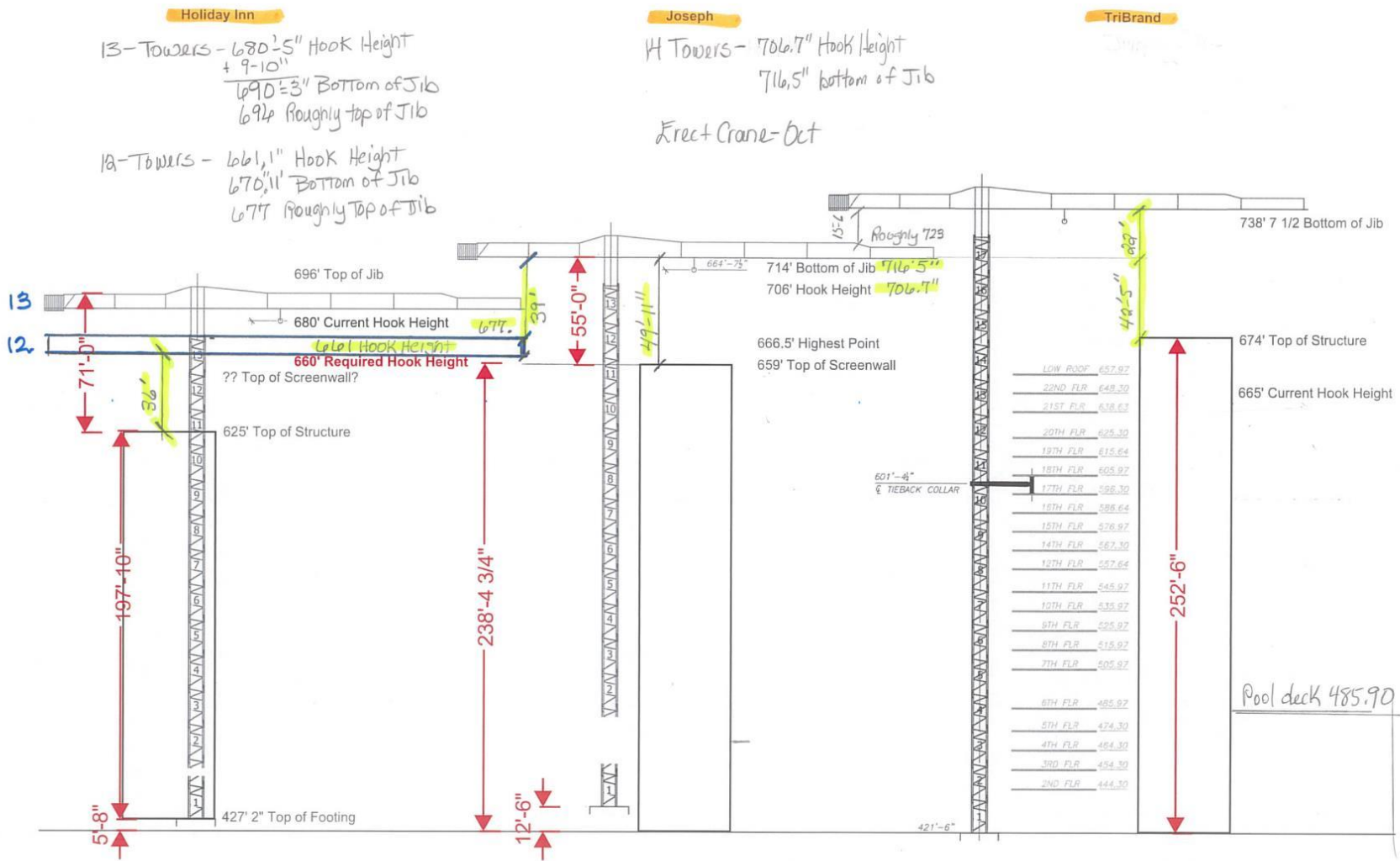
Virtual Design and Construction – Defining a Process

Putting BIM into Practice



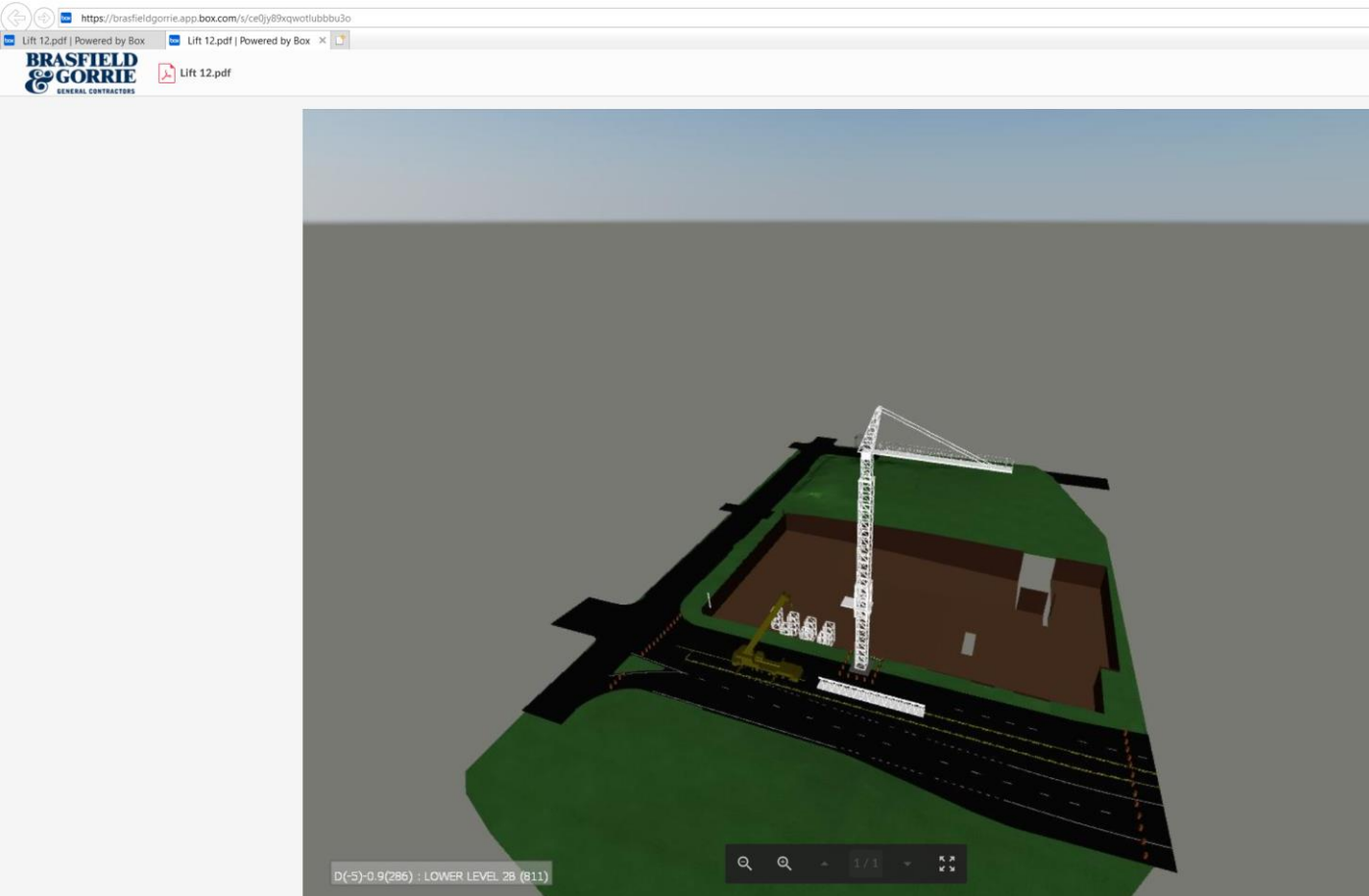
Communicating a Plan

Standard Deliverable - Planning



Communicating a Plan

Standard Deliverable - Planning



Assist Crane			
Make/Model:	Grove GMK5275 All Terrain Hydraulic		
Boom Configuration:	280' 7" Main Boom	Counterweight: 169,000#	Capacity: 36,400#

SK 415 Tower Crane			
TOWER QTY/TYPE:	2-TS213/1-Trans/11-TS212	I.H.U.H: 156' 6"	F.H.U.H: 273'
JIB Configuration	L10	REACH: 262'	CAPACITY: 5,000#

Seq. #	Description	Weight	Radius	Assist Crane Capacity	% of Capacity	Images
1	2-TS213 Tower Sections	19,900	70'	36,400	55%	Lift 1
2	1-TS213/212 Transition Tower Sections	9,750	70'	36,400	27%	Lift 2
3	1-TS212 Tower Sections	9,300	70'	36,400	26%	Lift 3
4	Climbing Cylinder	7,000	70'	36,400	19%	Lift 4
5	Climbing Frame	18,000	70'	36,400	49%	Lift 5
6	2-TS212 Tower Sections	18,600	70'	36,400	51%	Lift 6
7	2-TS212 Tower Sections	18,600	70'	36,400	51%	Lift 7
8	TSK 212 Tower Section	6,175	70'	36,400	17%	Lift 8
9	Turntable	23,850	70'	36,400	66%	Lift 9
10	Operator Cab	3,750	70'	36,400	10%	Lift 10
11	Tower Top	9,600	70'	36,400	26%	Lift 11
12	Counter Jib Complete (Assembled on the Ground)	26,500	70'	36,400	73%	Lift 12
13	Inner Jib	15,100	70'	36,400	41%	Lift 13
14	Counter Weight	6,800	70'	36,400	19%	Lift 14
15	Inner Trolley/Load Block	2,950	70'	36,400	8%	Lift 15
16	Relocate Assist Crane		160'			Lift 16
17	Outer Jib (Assembled on the Ground)	19,660	70'	36,400	54%	Lift 17
18	Counter Weight	6,800	70'	36,400	19%	Lift 18
19	Counter Weight	6,800	70'	36,400	19%	Lift 19
20	Counter Weight	6,800	70'	36,400	19%	Lift 20
21	Counter Weight	6,800	70'	36,400	19%	Lift 21
22	Counter Weight	6,800	70'	36,400	19%	Lift 22
23	Counter Weight	6,800	70'	36,400	19%	Lift 23
24	Counter Weight	6,800	70'	36,400	19%	Lift 24
25	1-TS212 Tower Sections - Climb	9,300	70'	22,040	42%	Lift 25
26	1-TS212 Tower Sections - Climb	9,300	70'	22,040	42%	Lift 26
27	1-TS212 Tower Sections - Climb	9,300	70'	22,040	42%	Lift 27
28	1-TS212 Tower Sections - Climb	9,300	70'	22,040	42%	Lift 28
29	1-TS212 Tower Sections - Climb	9,300	70'	22,040	42%	Lift 29
30	1-TS212 Tower Sections - Climb	9,300	70'	22,040	42%	Lift 30
31	Remove Climbing Frame	18,000	70'	22,040	82%	Lift 31
32	Remove Climbing Cylinder	7,000	70'	22,040	32%	Overhead

Notes and Qualifications
 Component weights listed are consistent with those in the Terex Peiner manual.
 Component weights should be confirmed in the field per the Terex Peiner manual.
 Component weights found to be within +/- 10% of the Terex Peiner manual in prior field test.

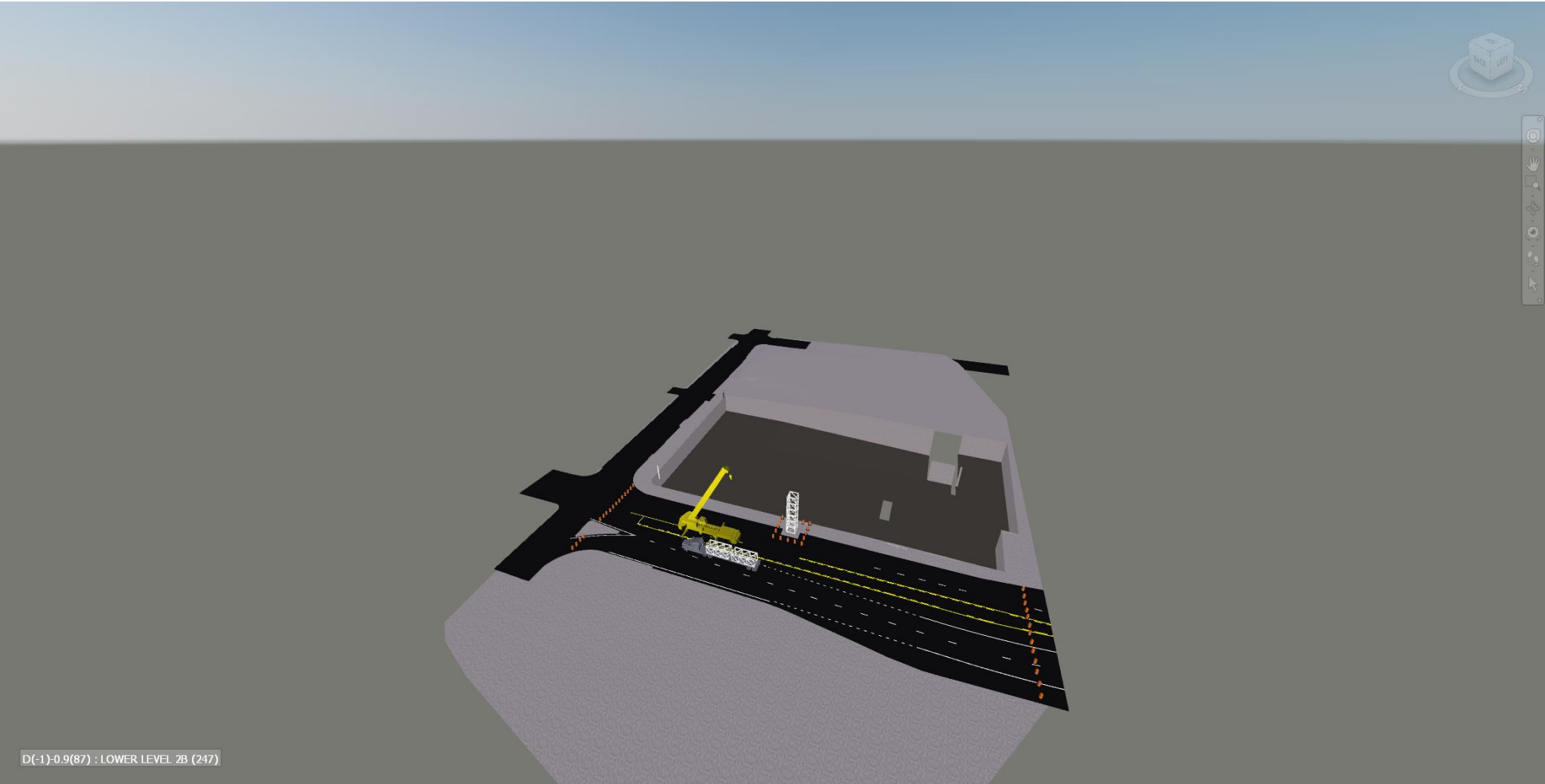
If you have any questions or would like any further information, please contact us at the information below.



Communicating a Plan

Defining New Deliverables

Increased Communication



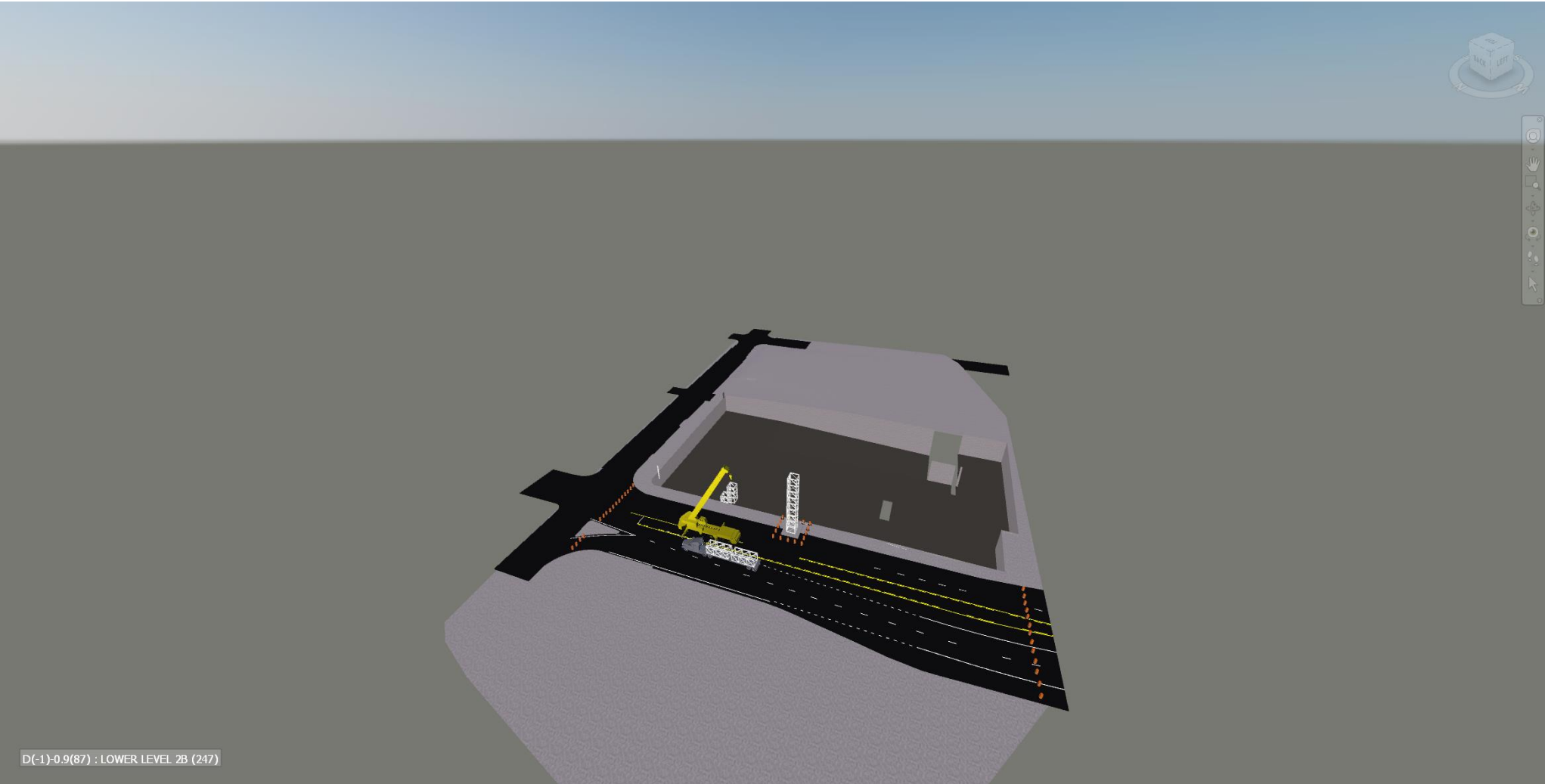
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Communicating a Plan

Defining New Deliverables

Increased Communication



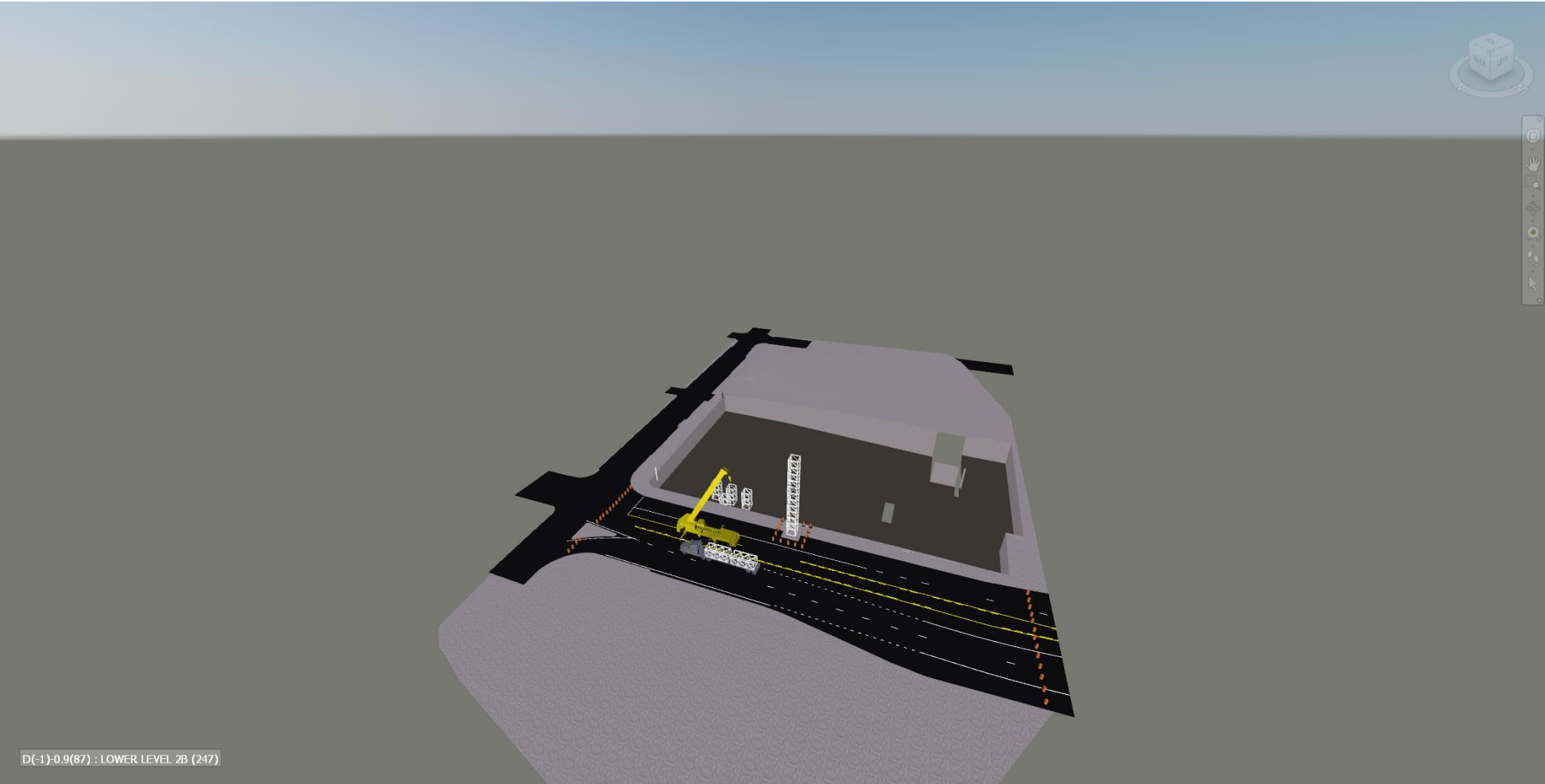
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Defining New Deliverables

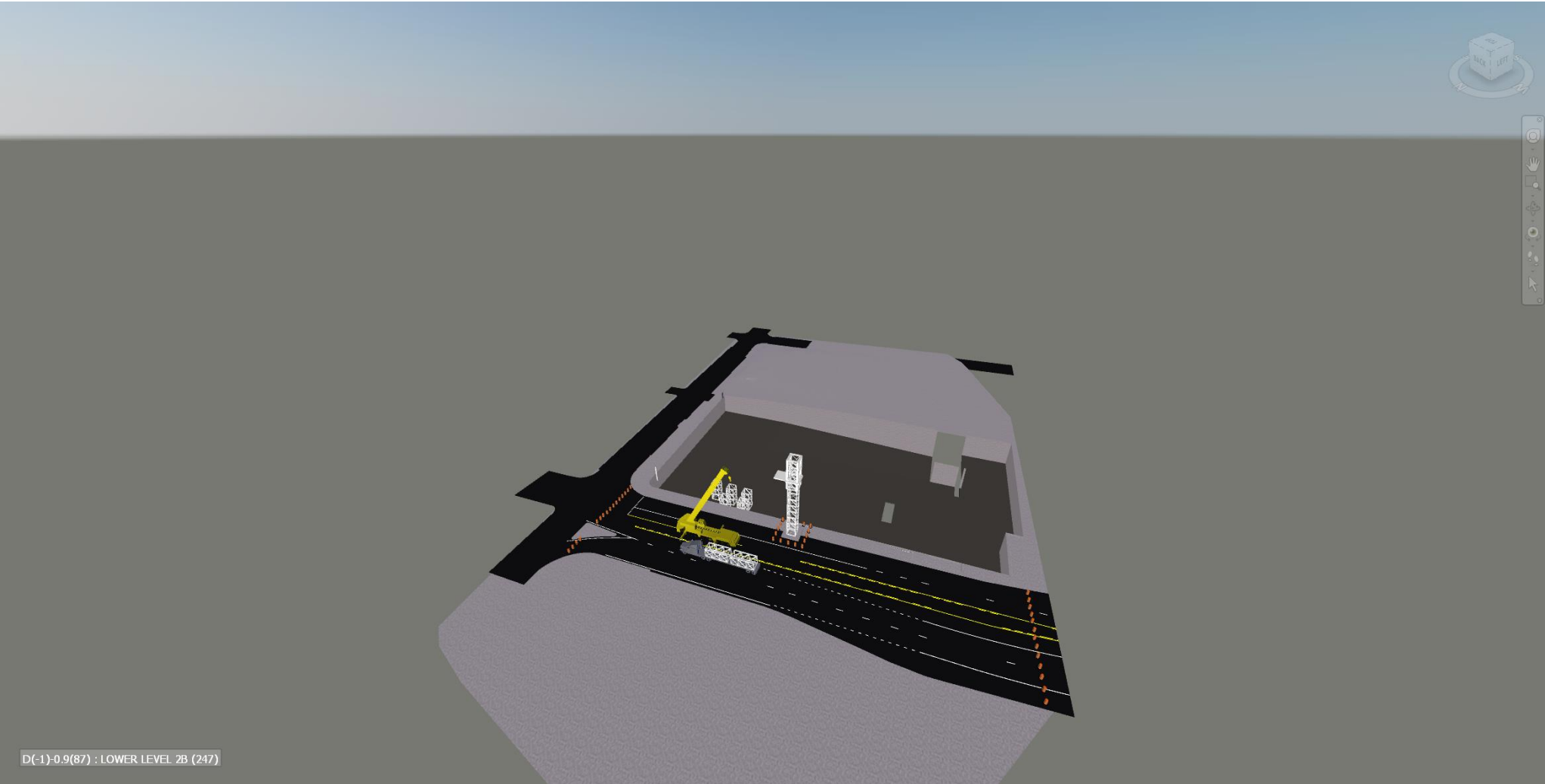
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Defining New Deliverables

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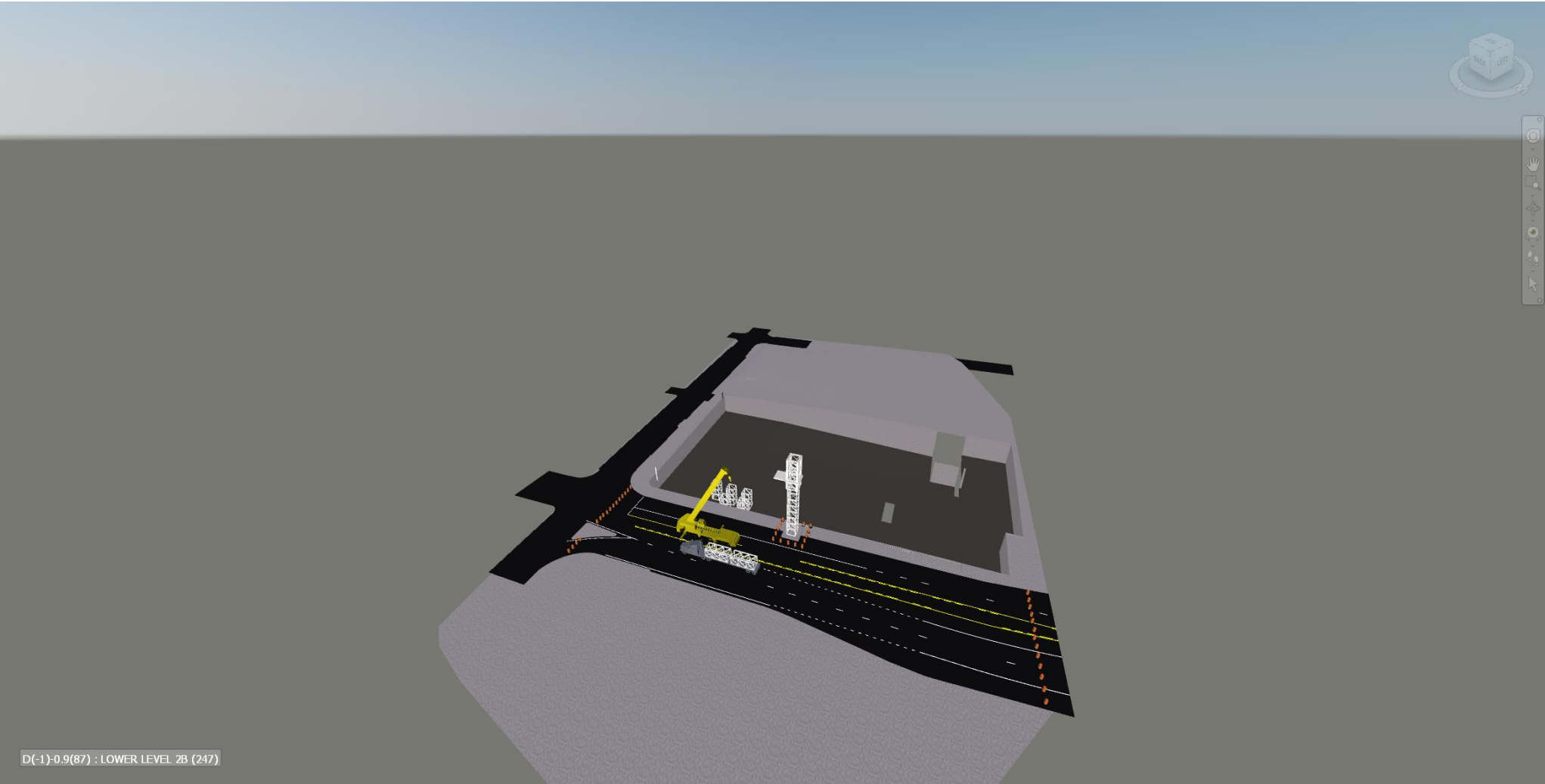
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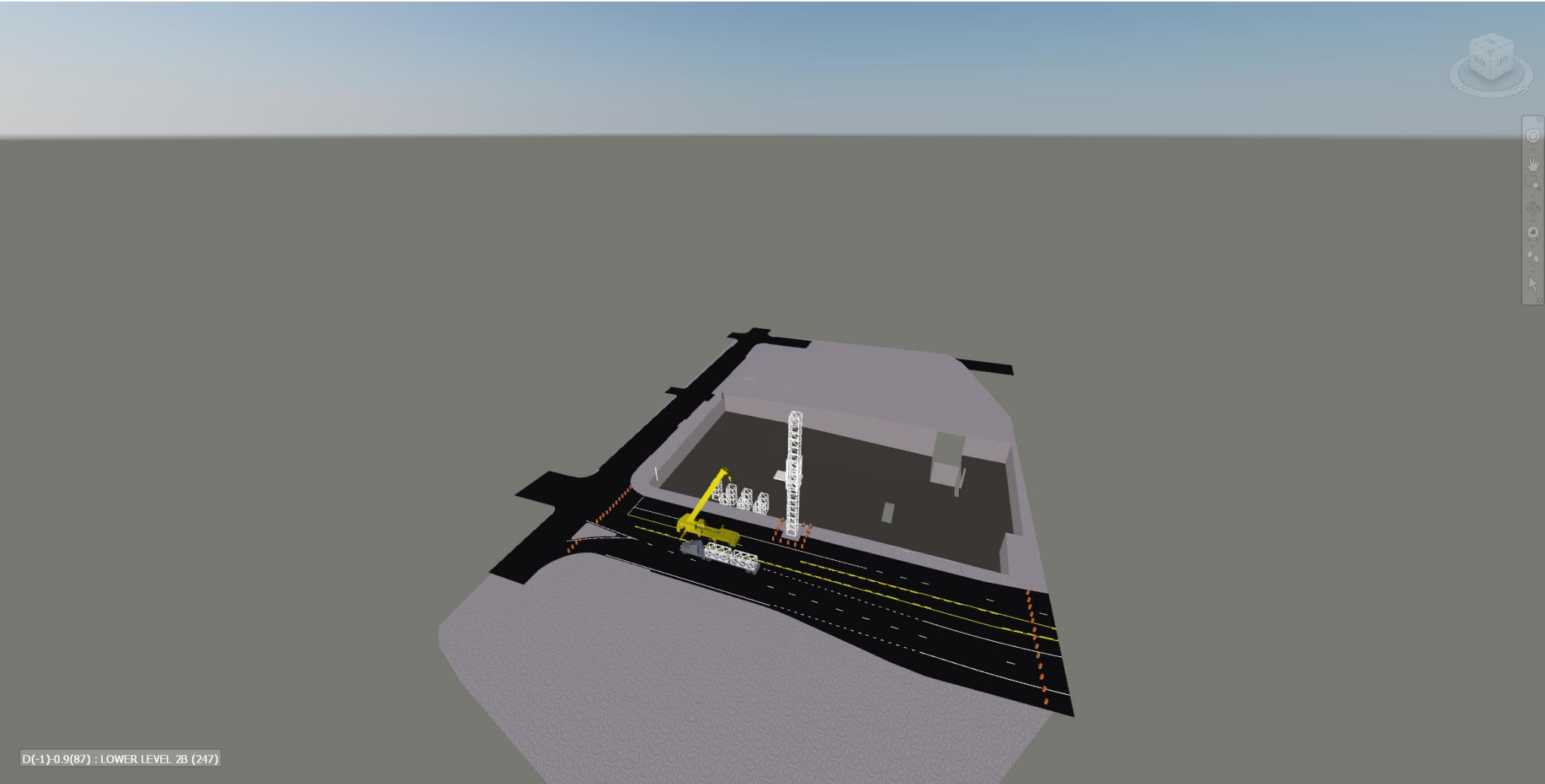
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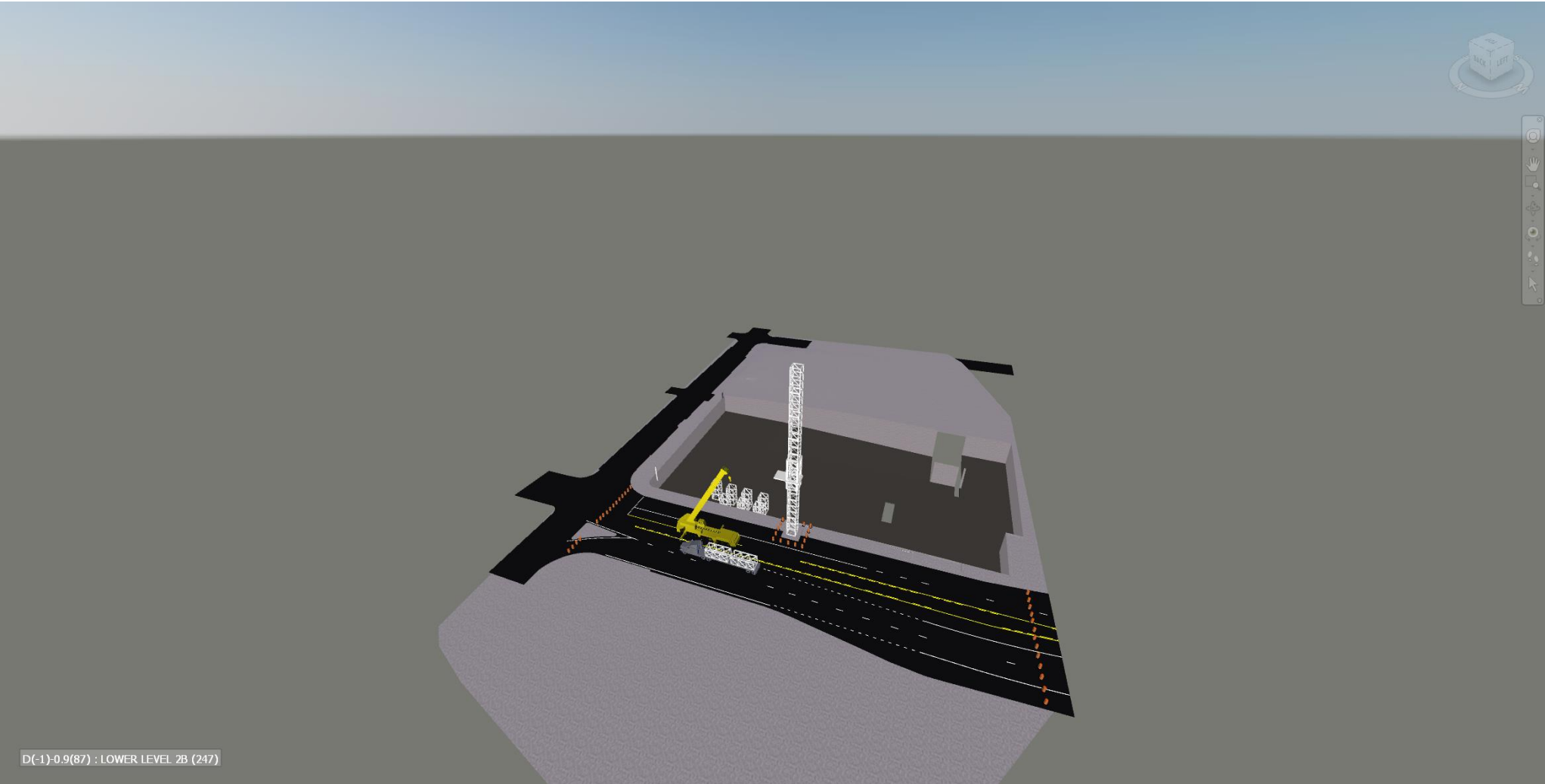
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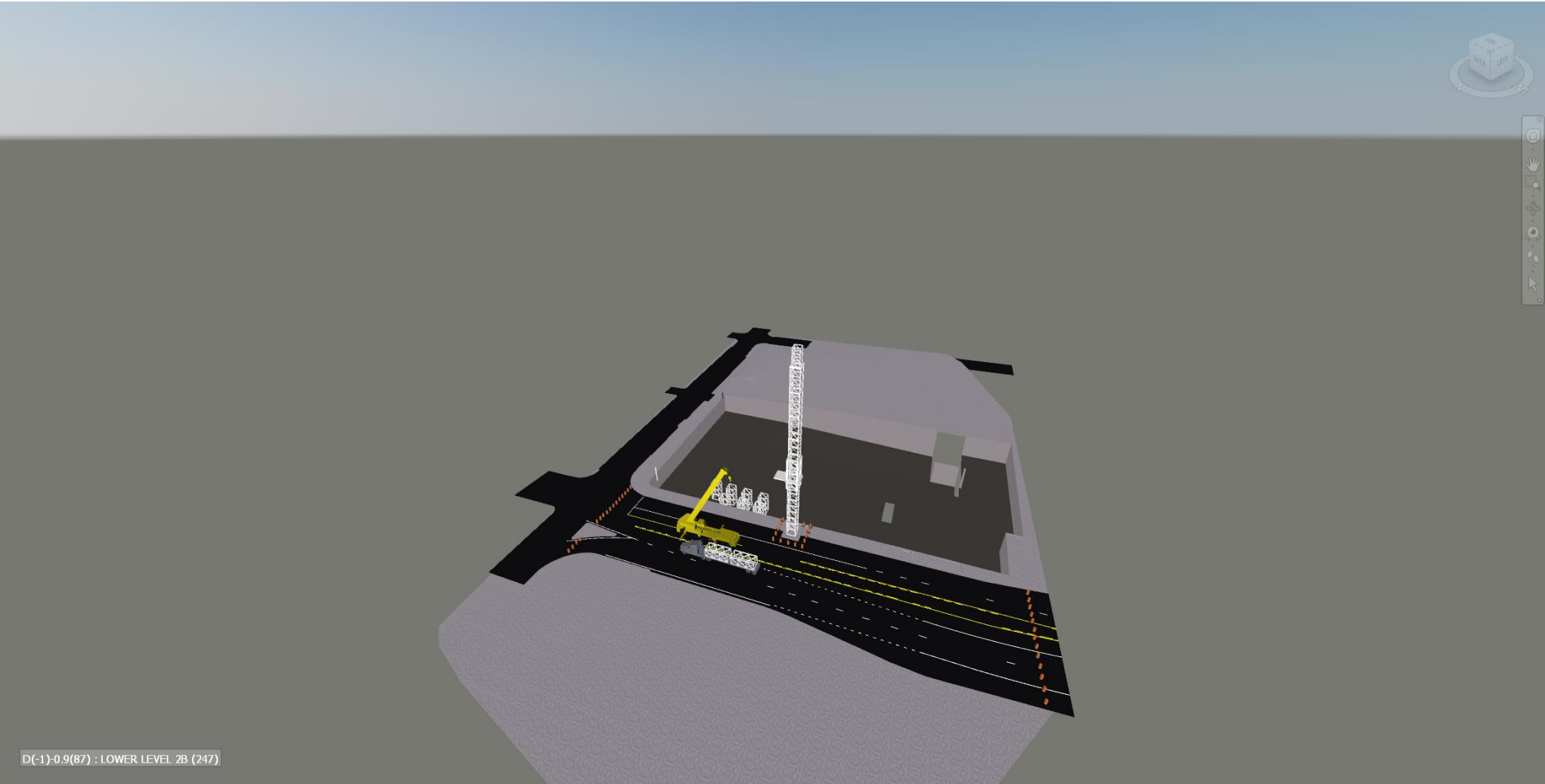
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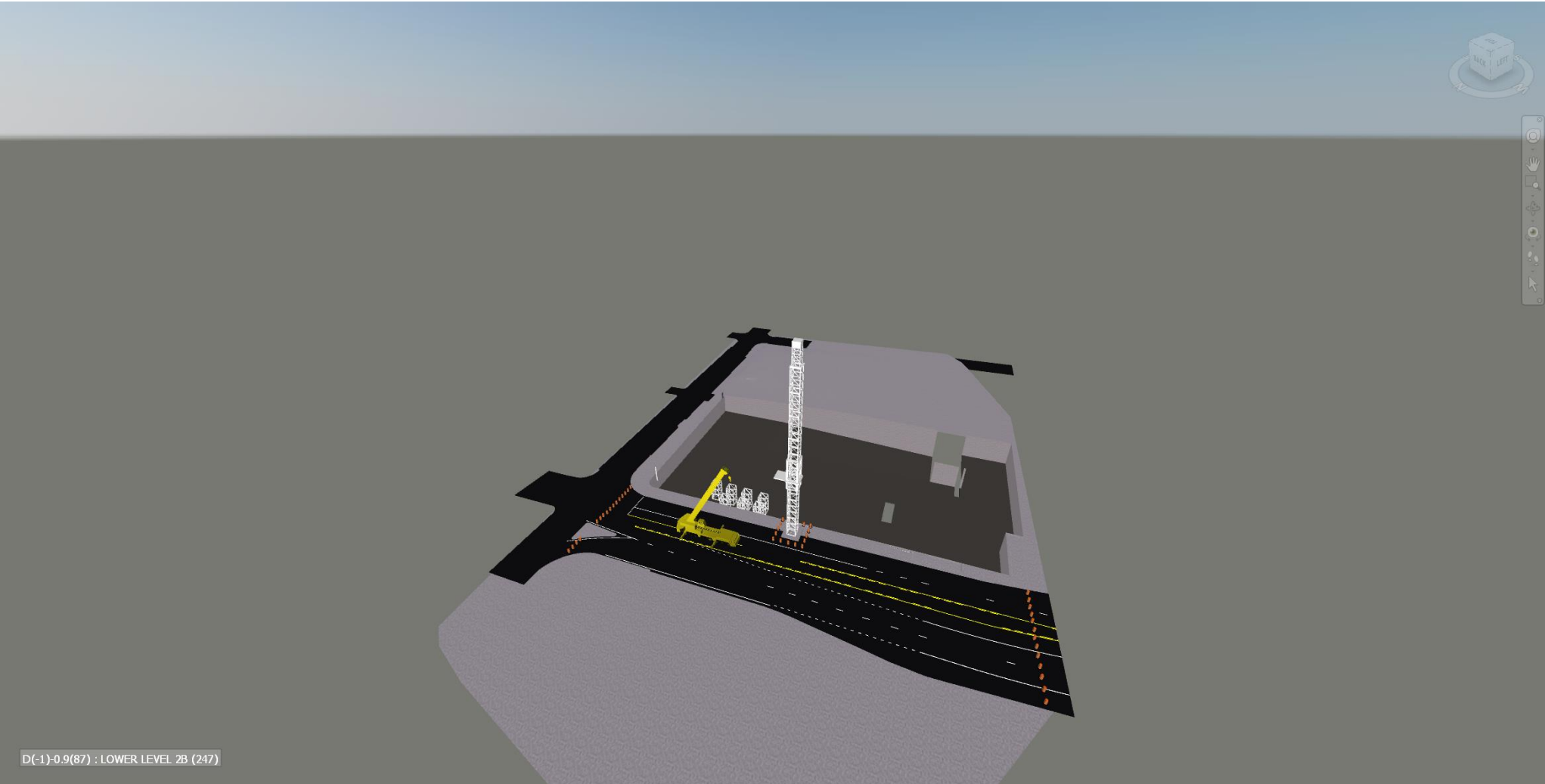
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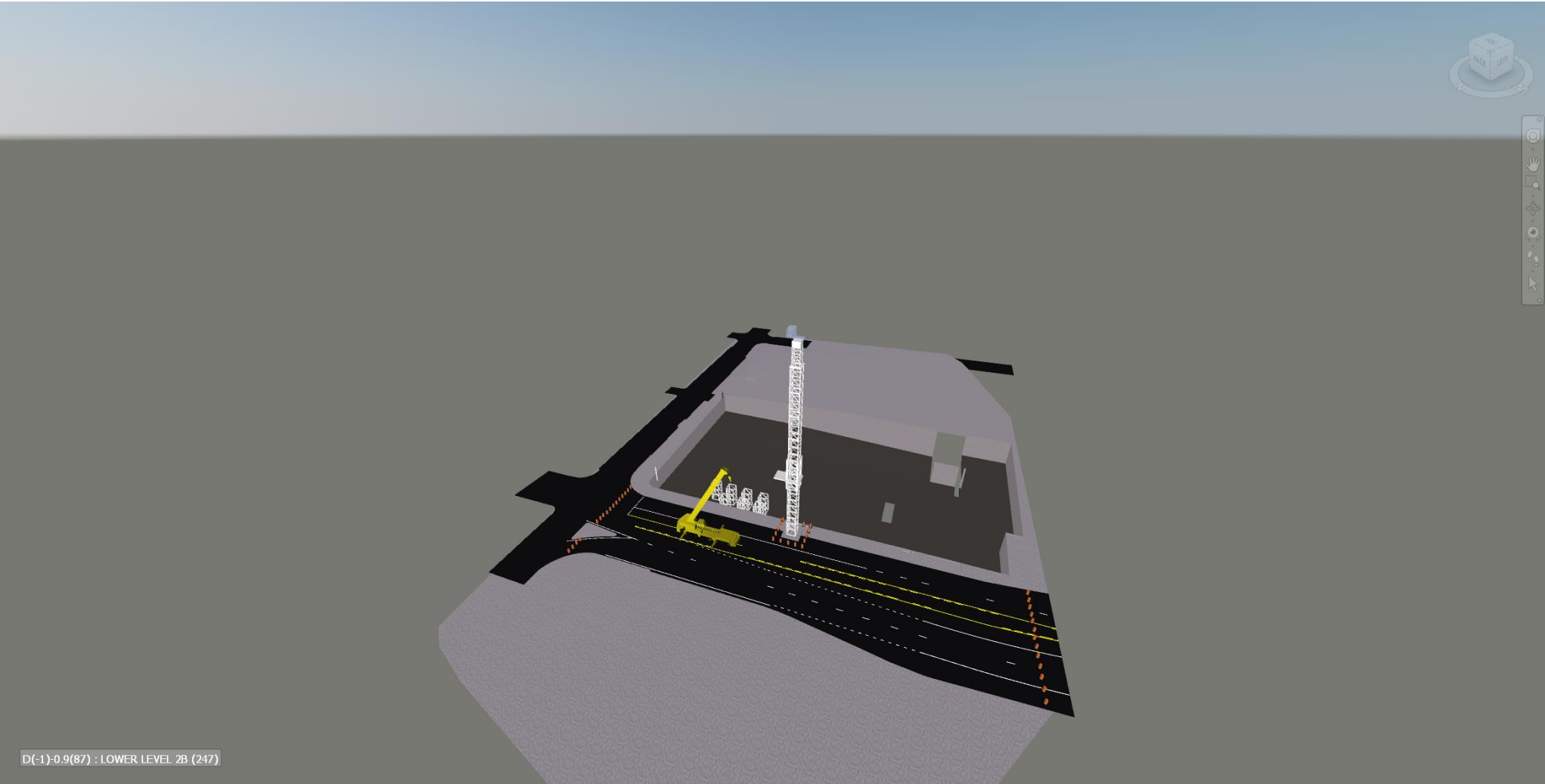
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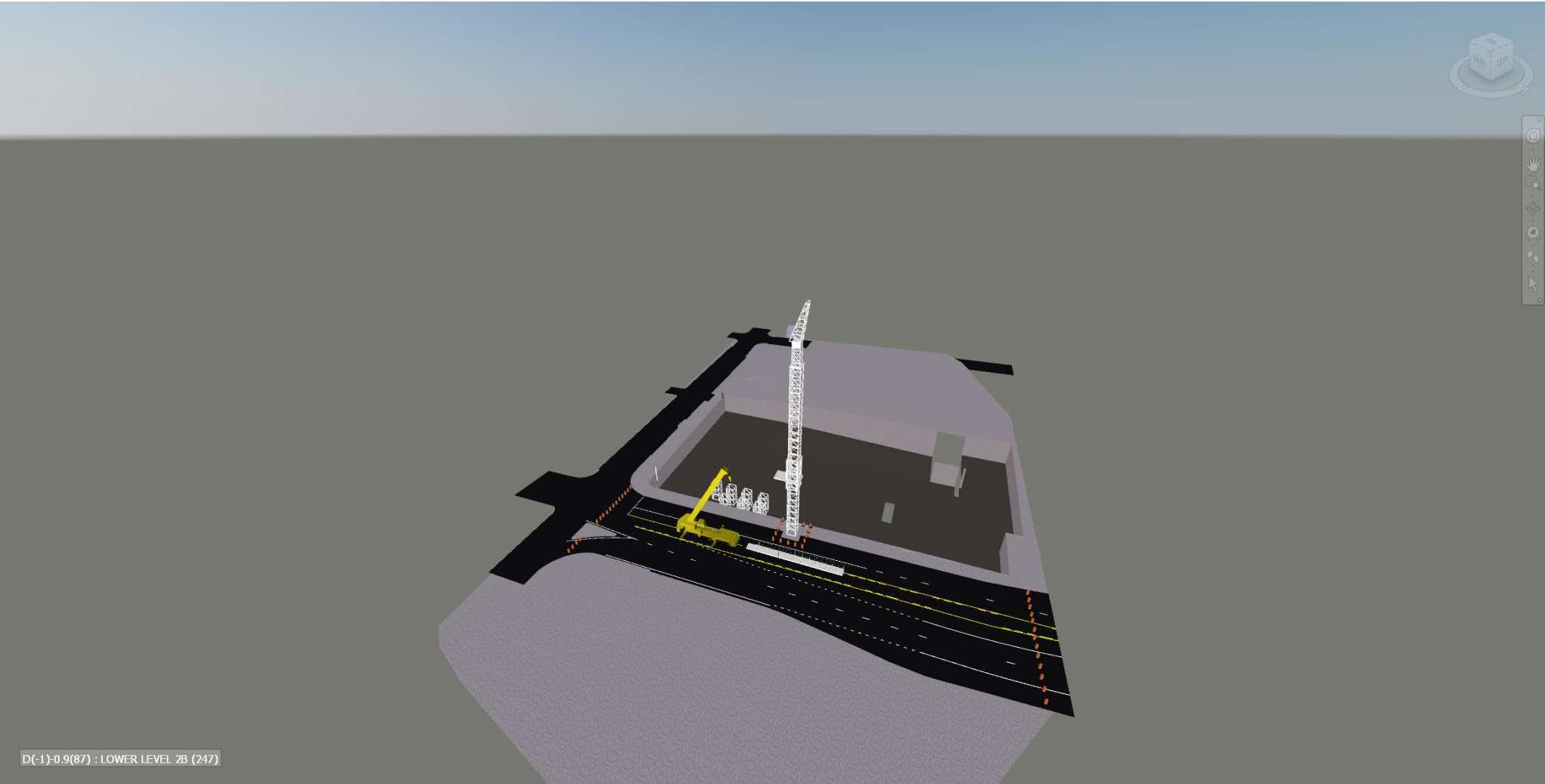
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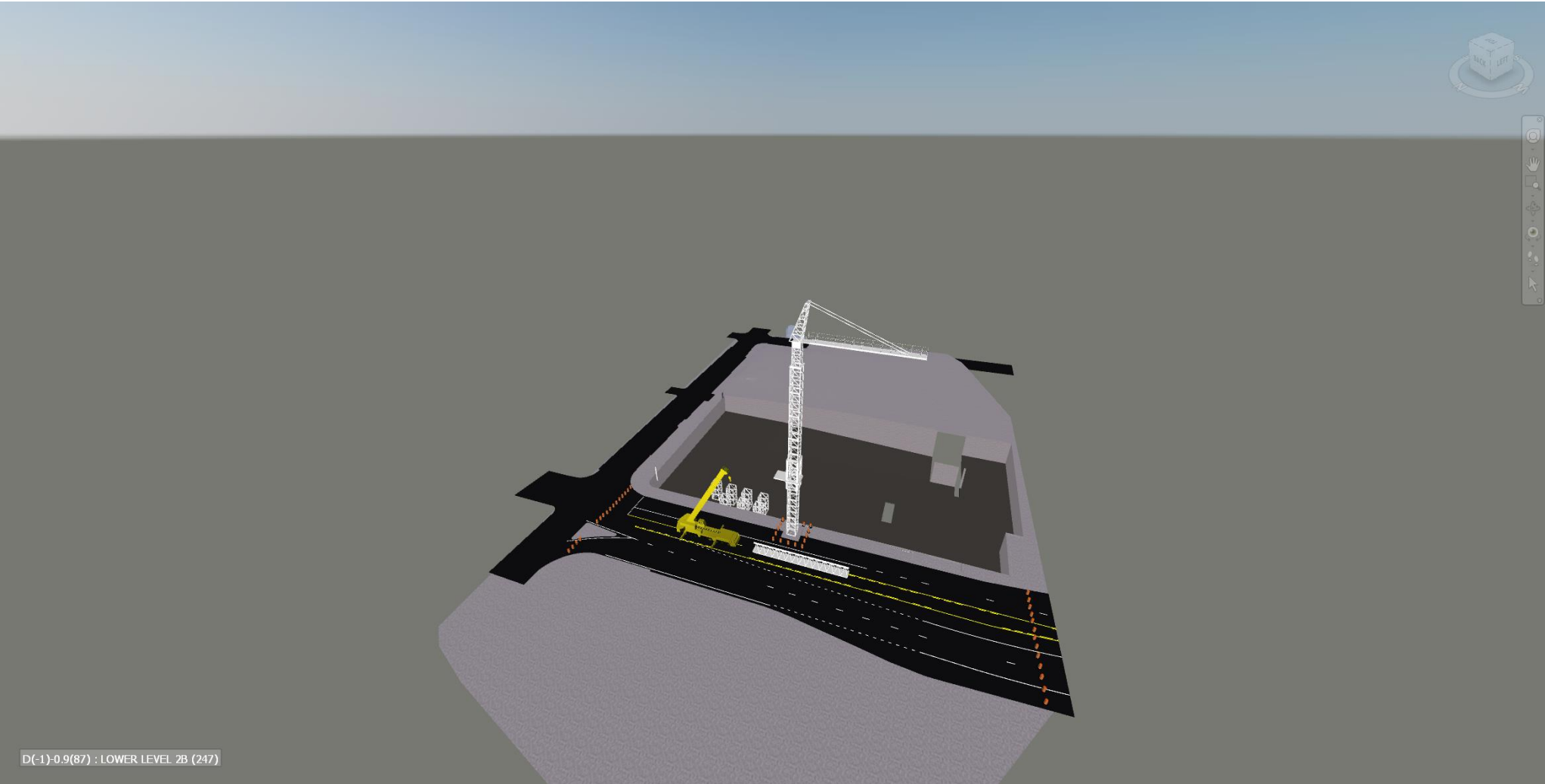
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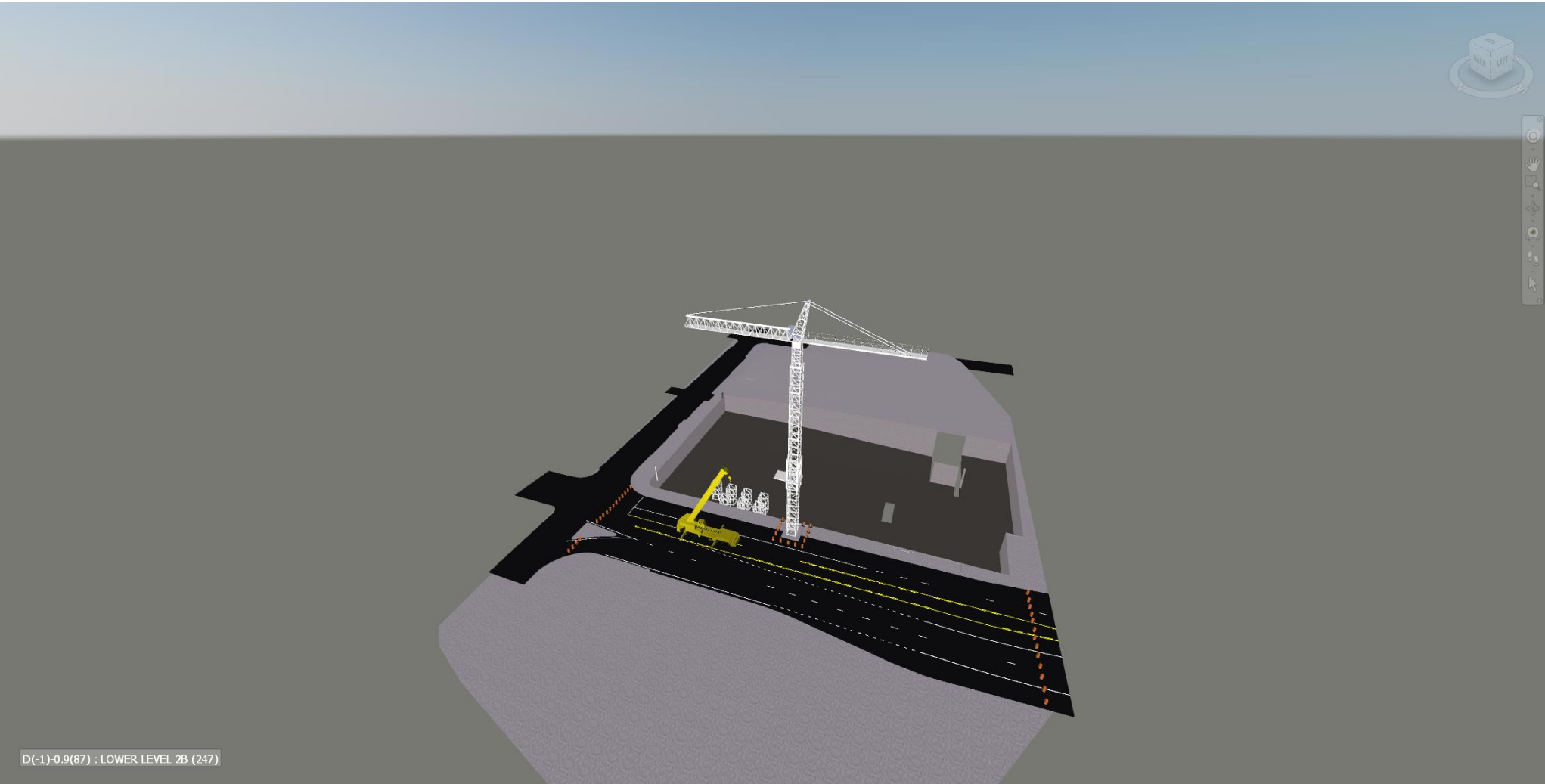
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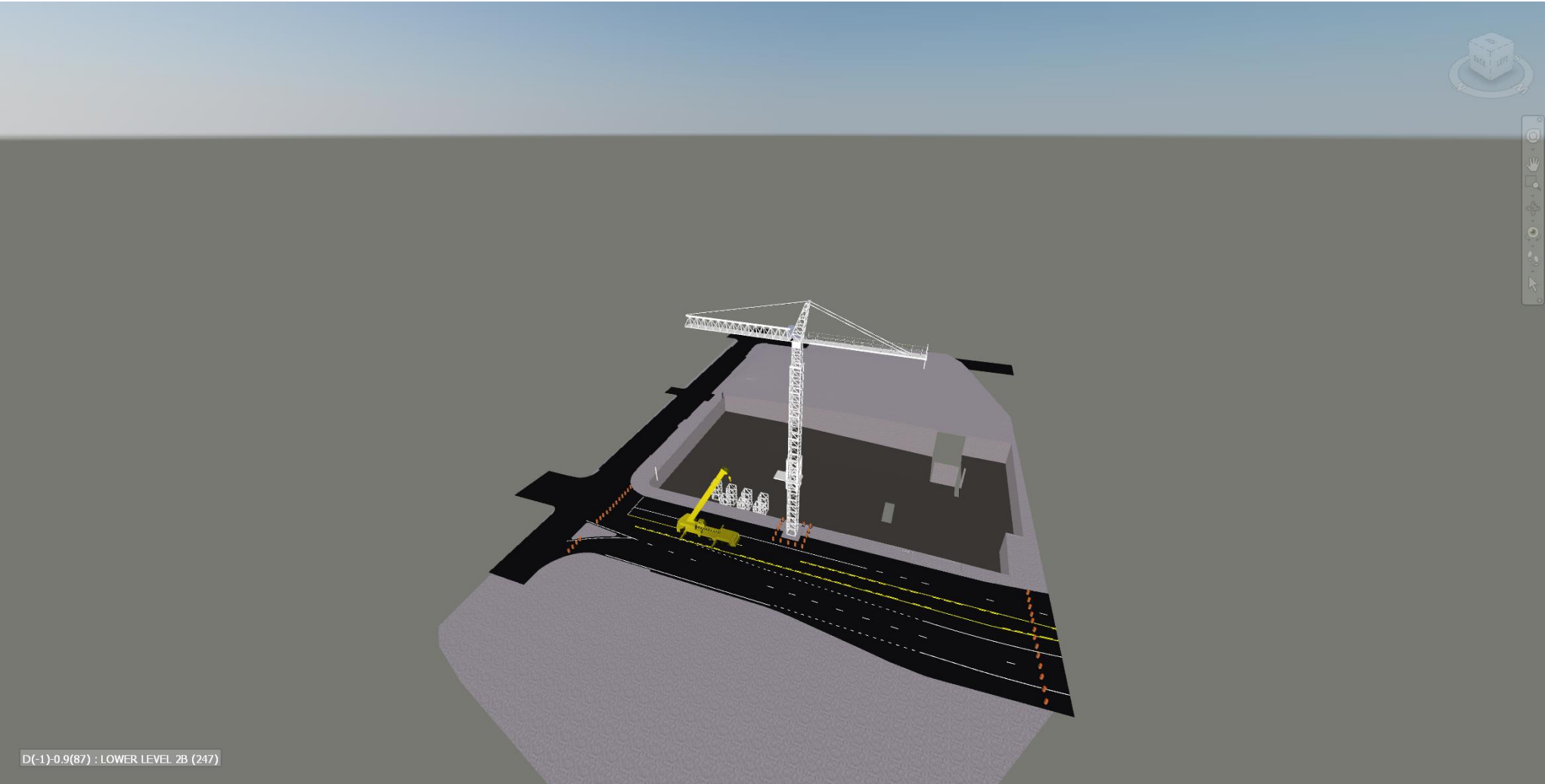
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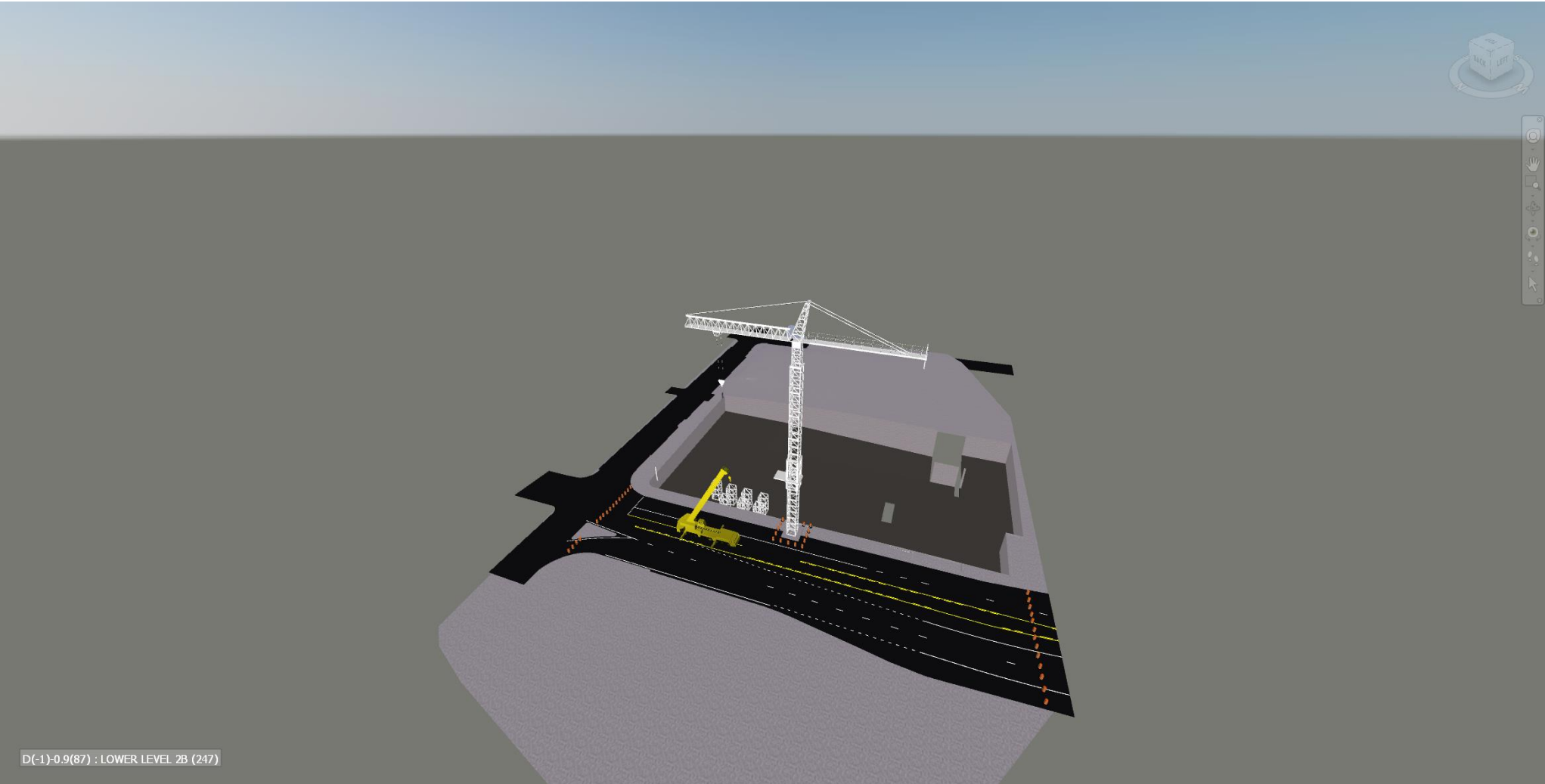
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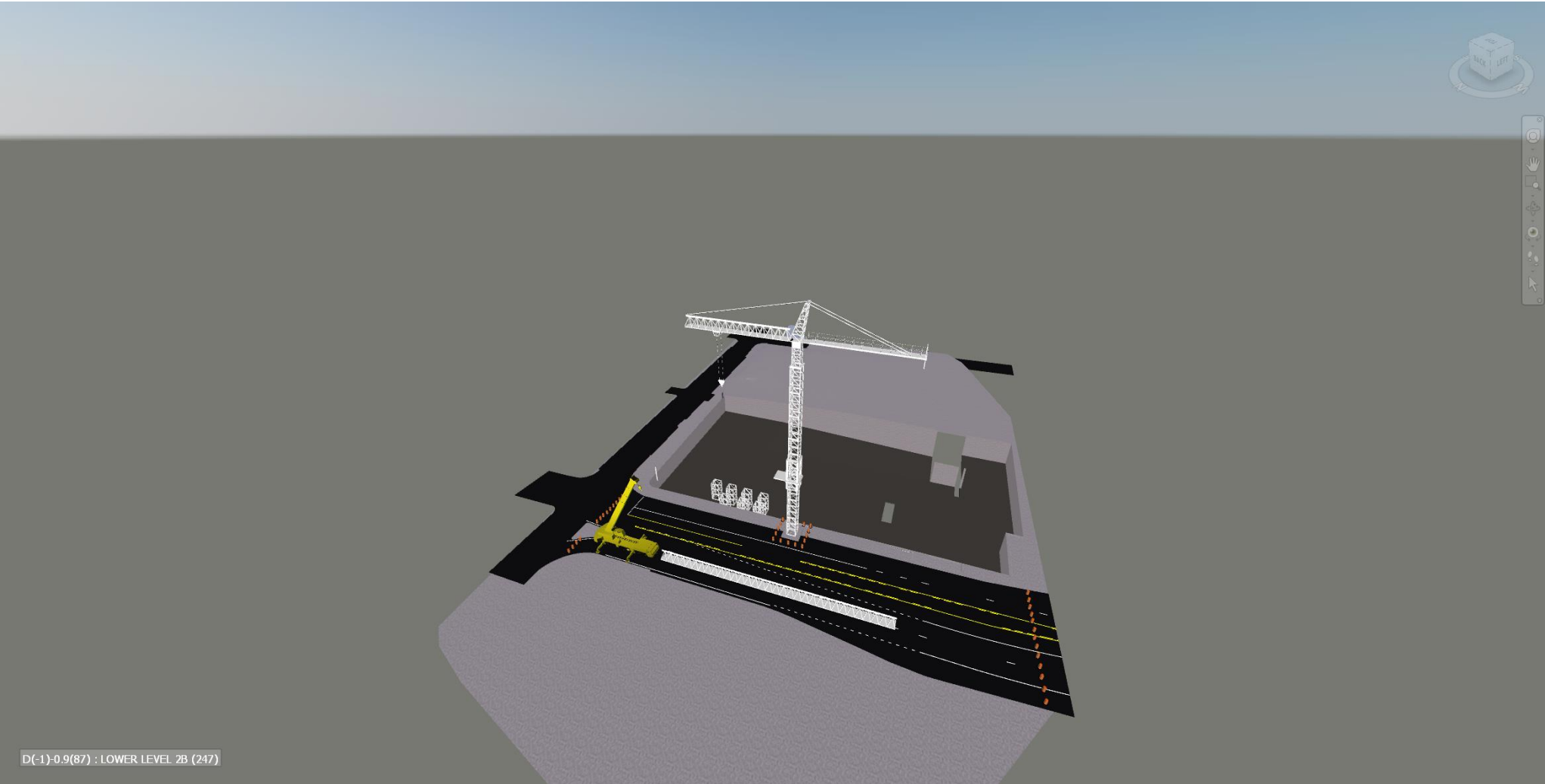
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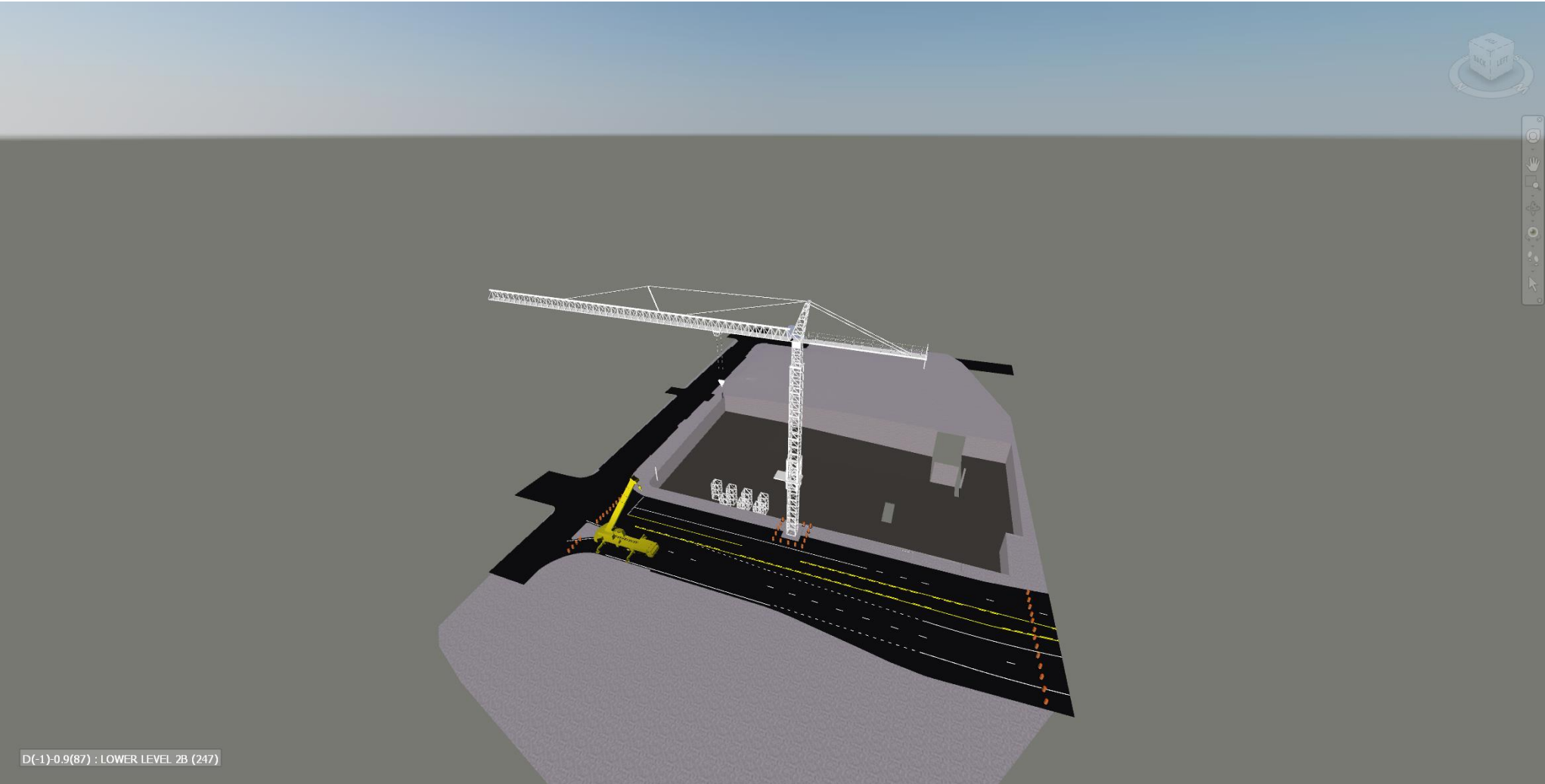
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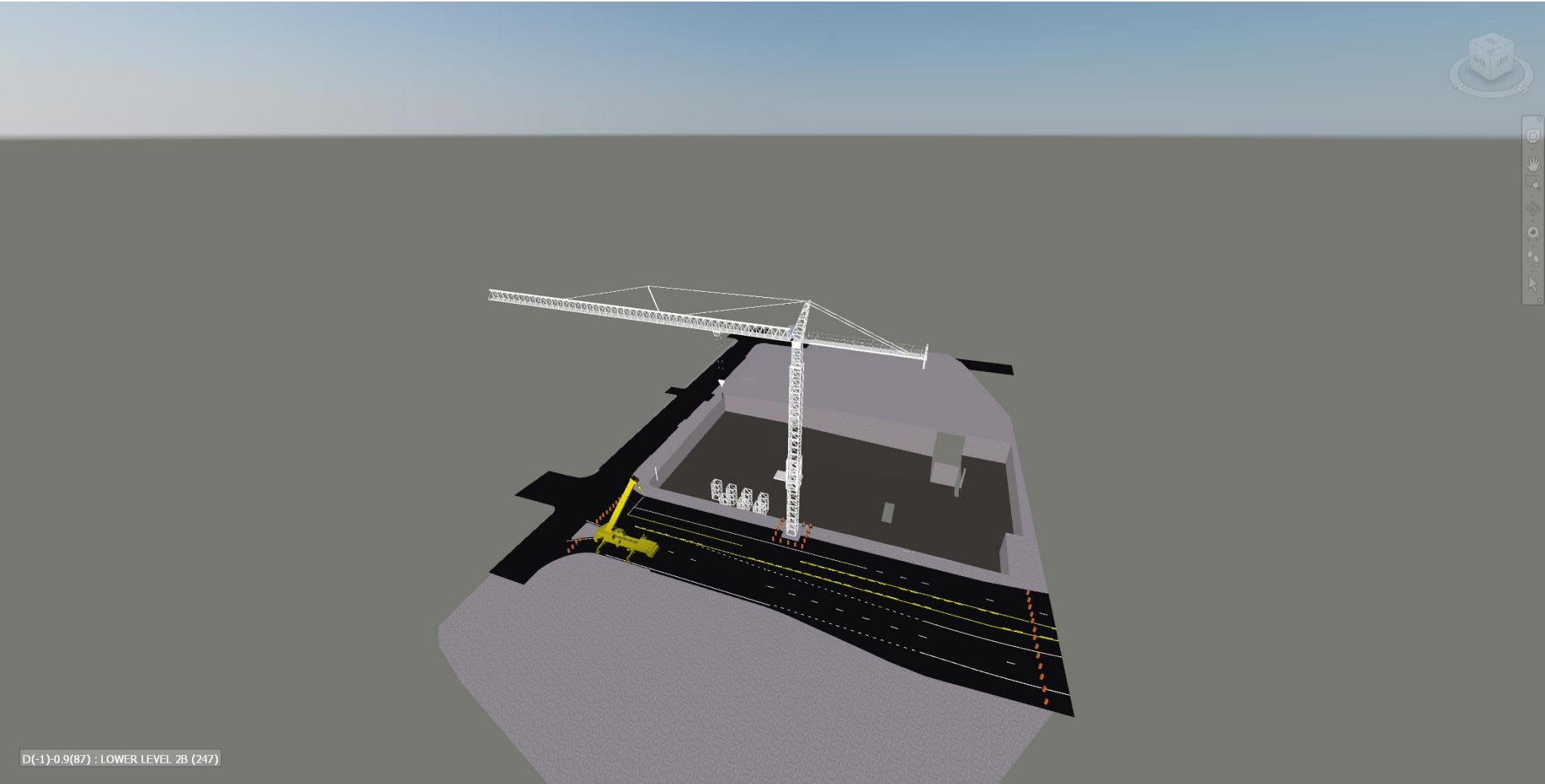
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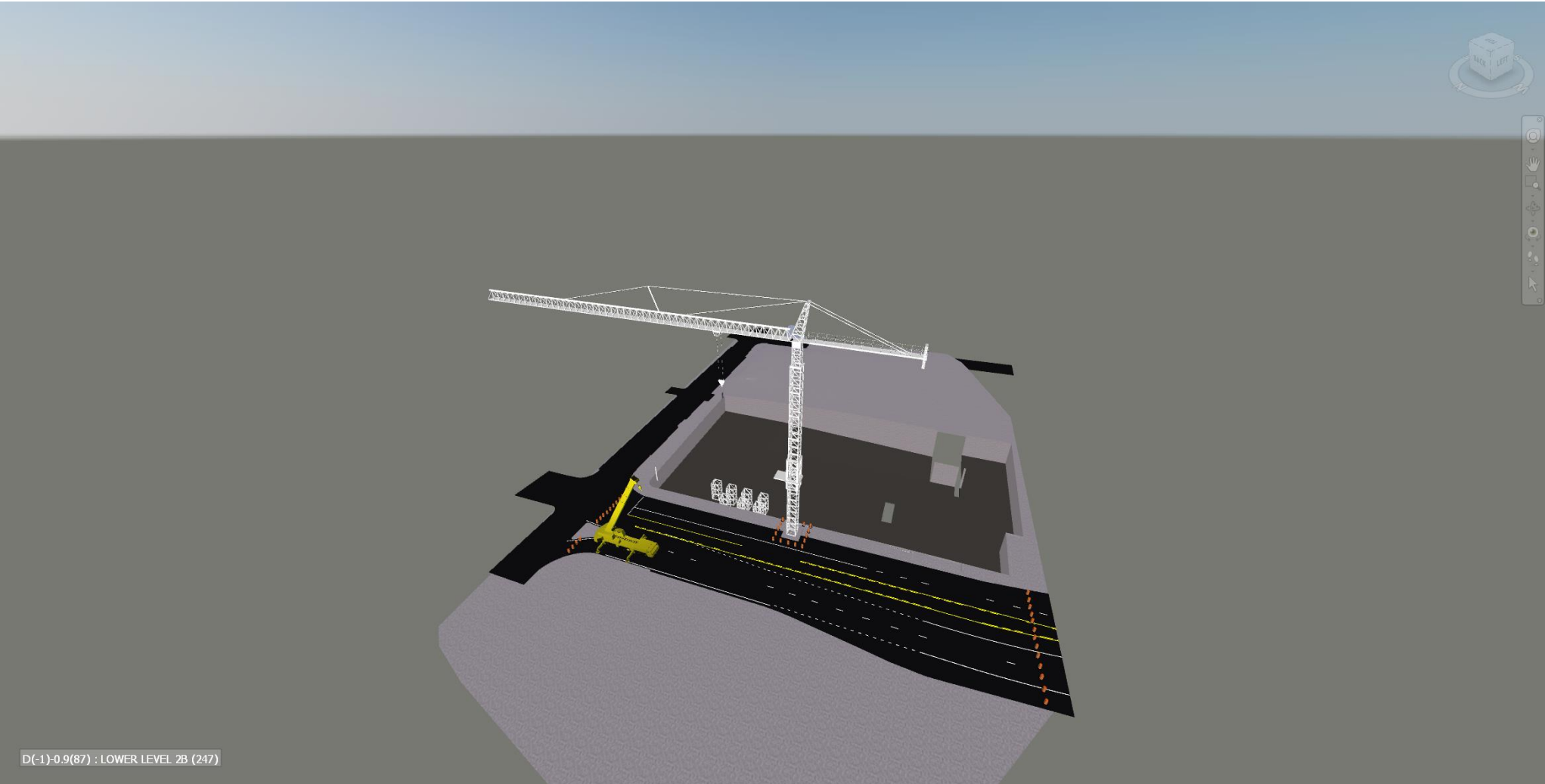
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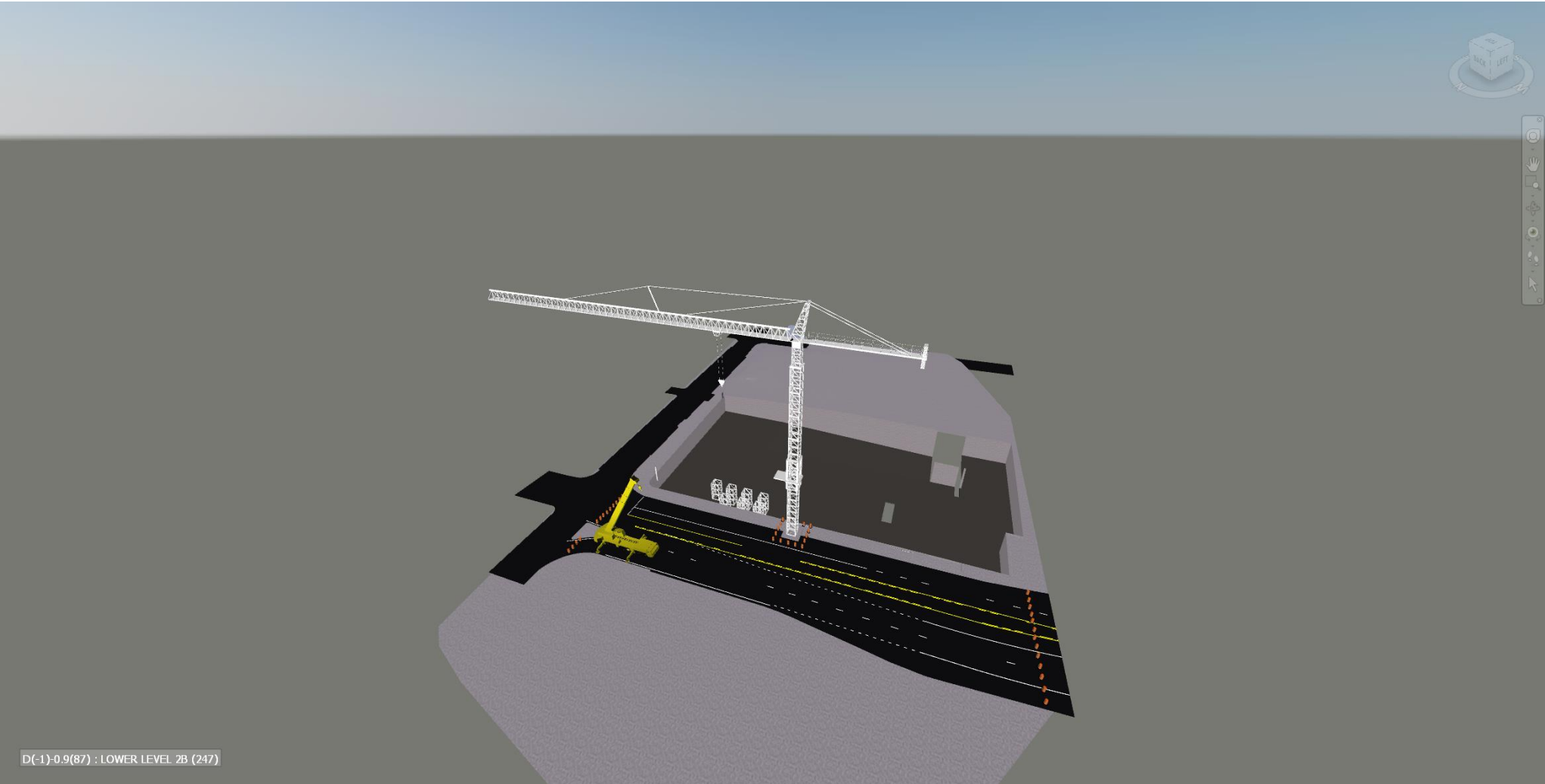
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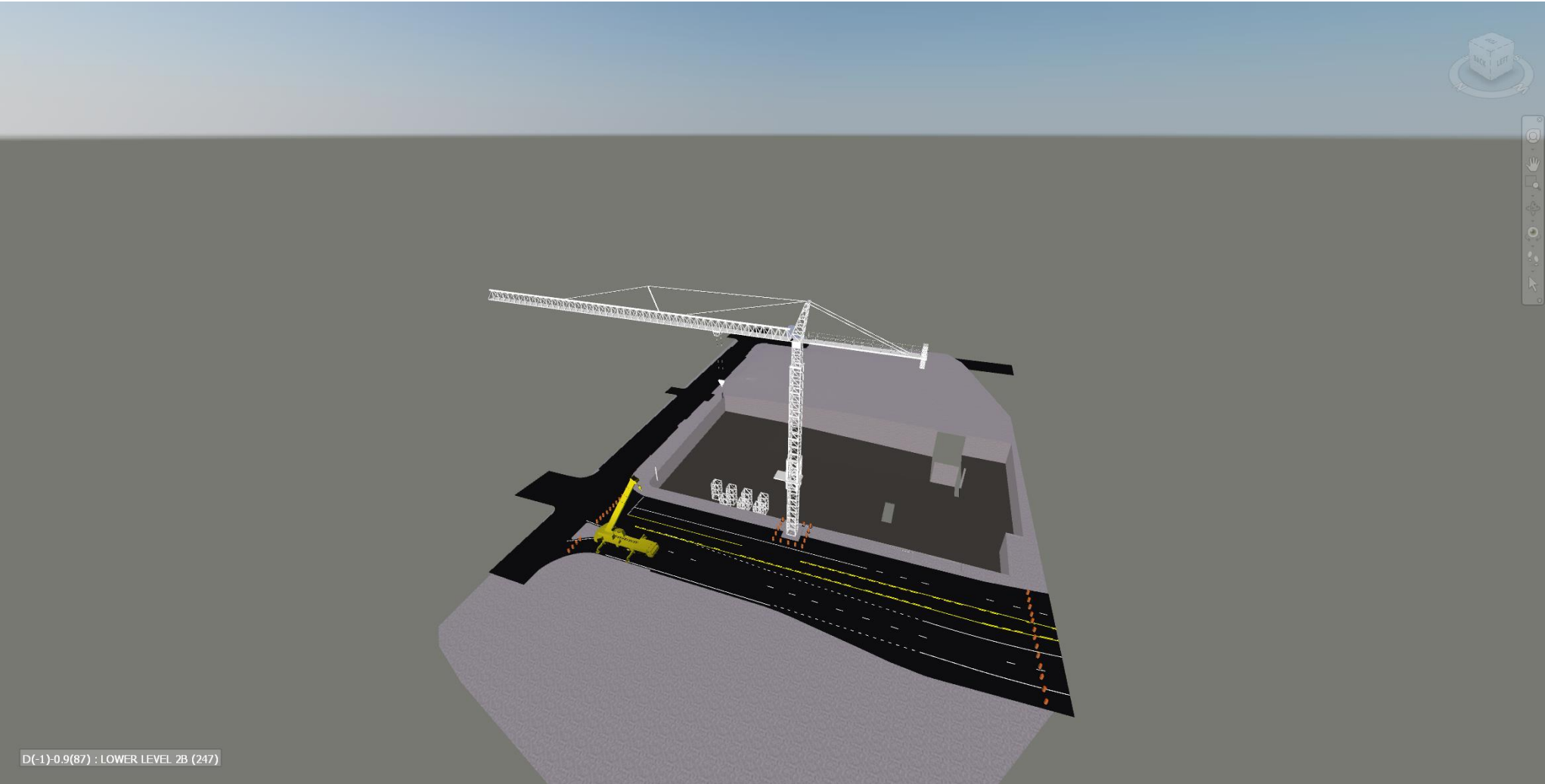
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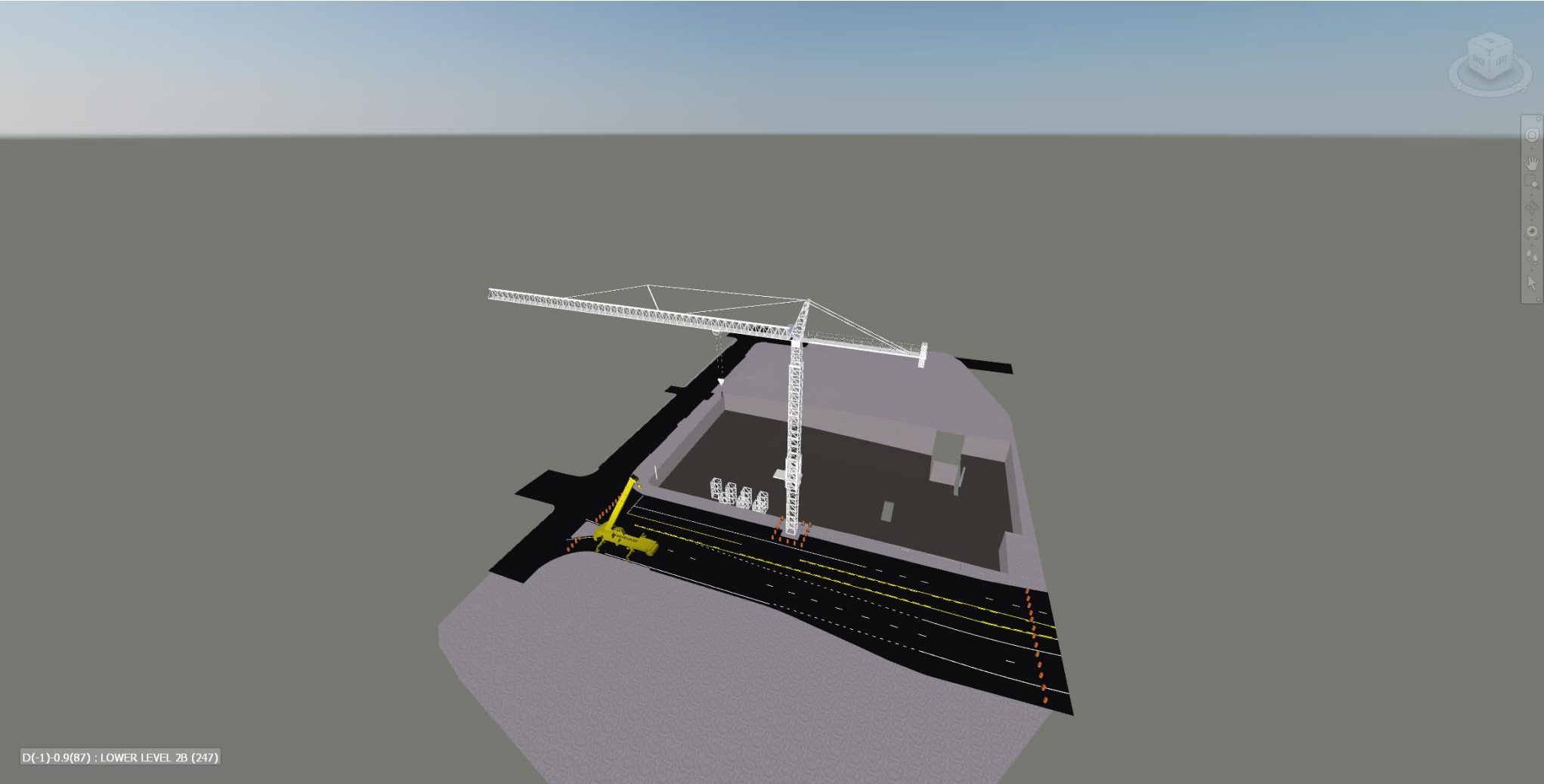
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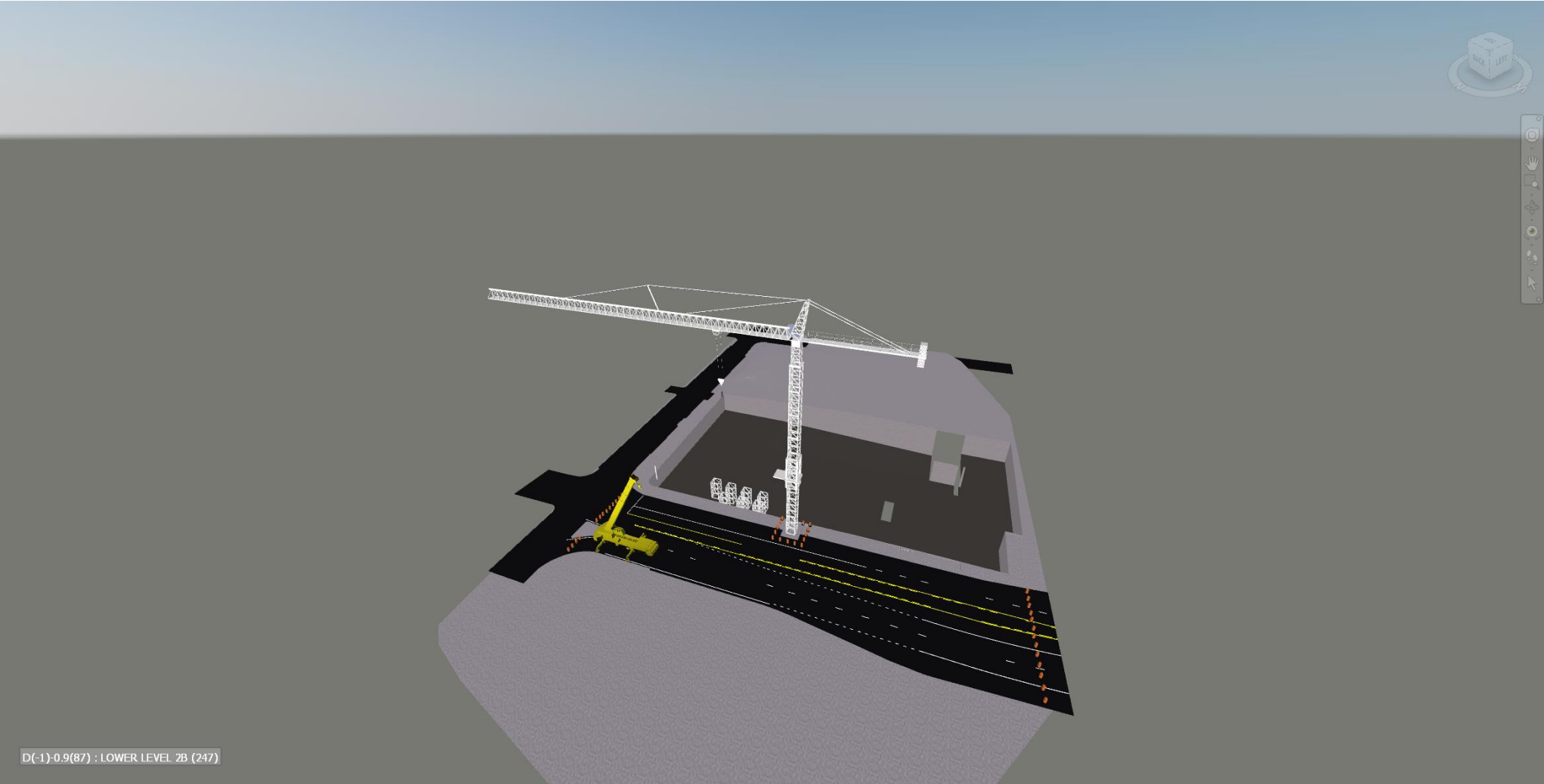
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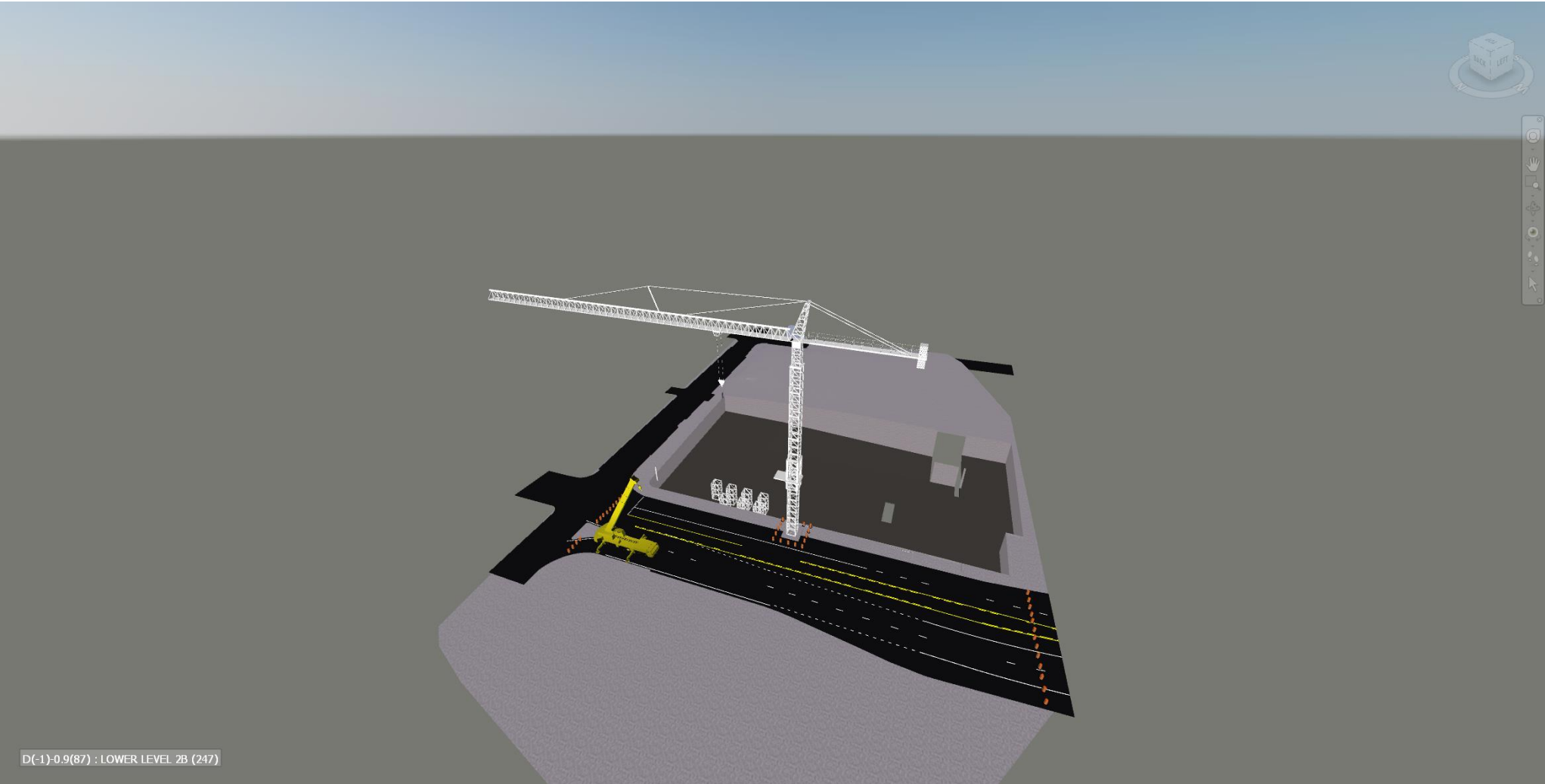
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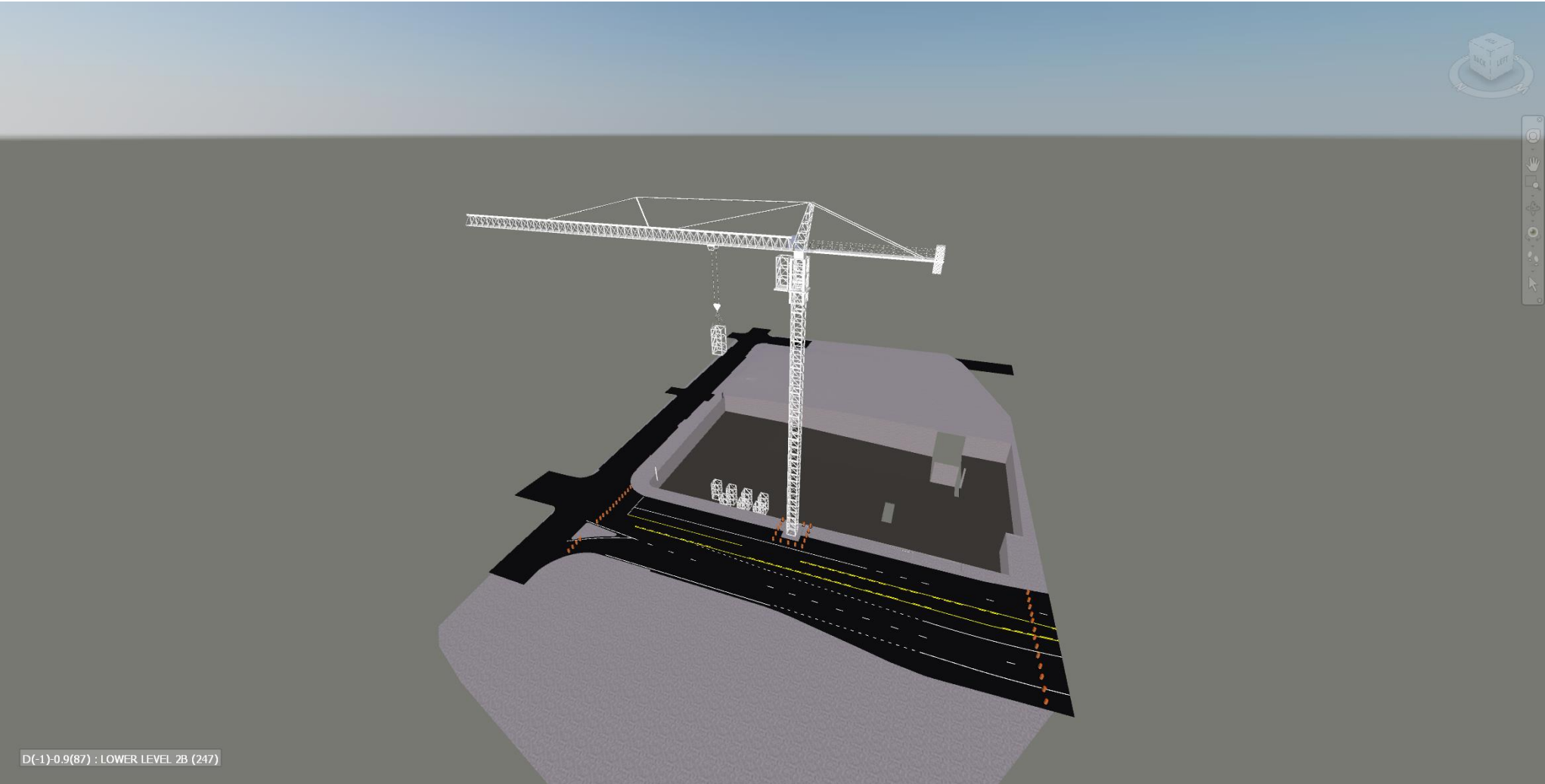
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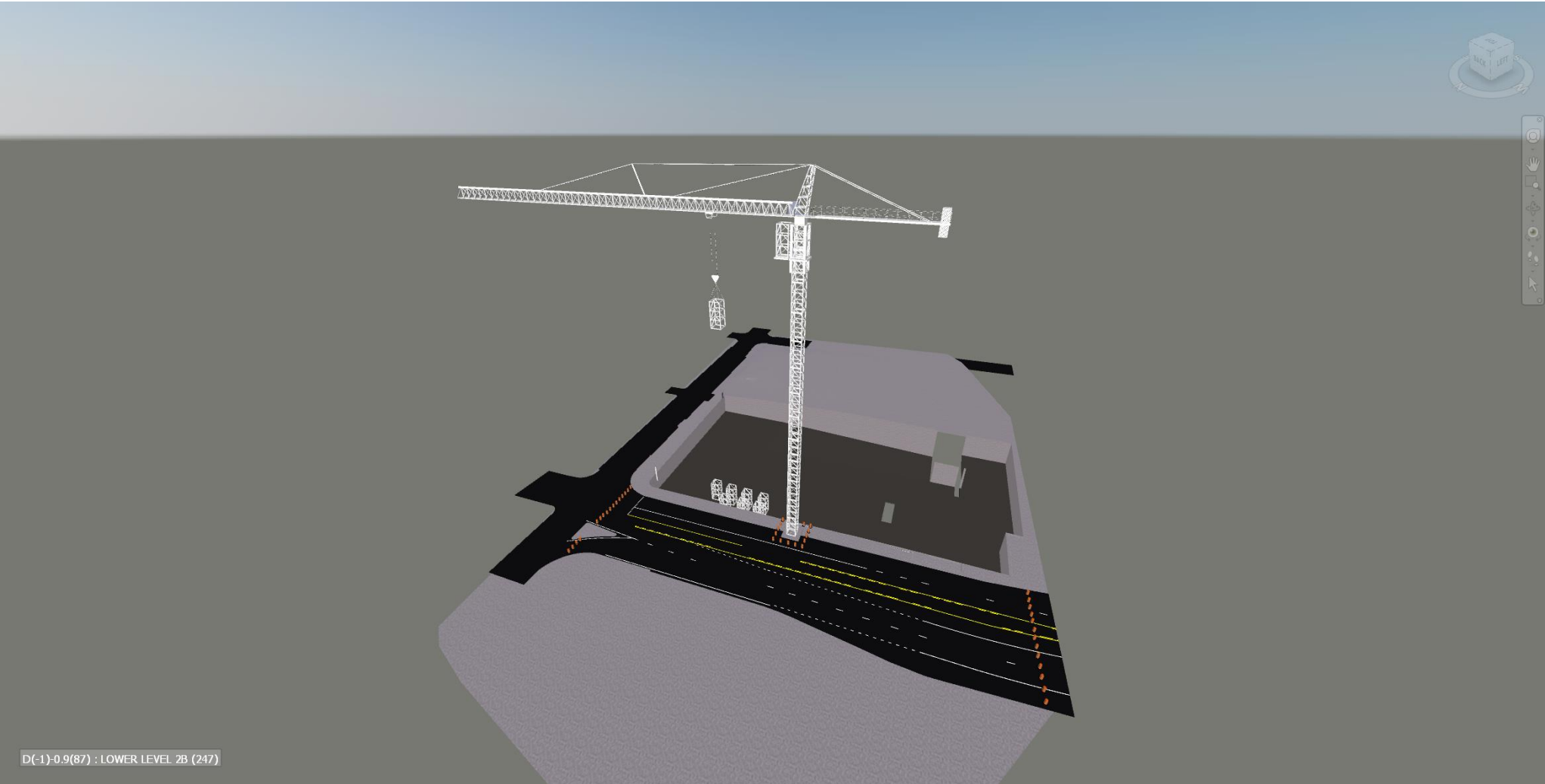
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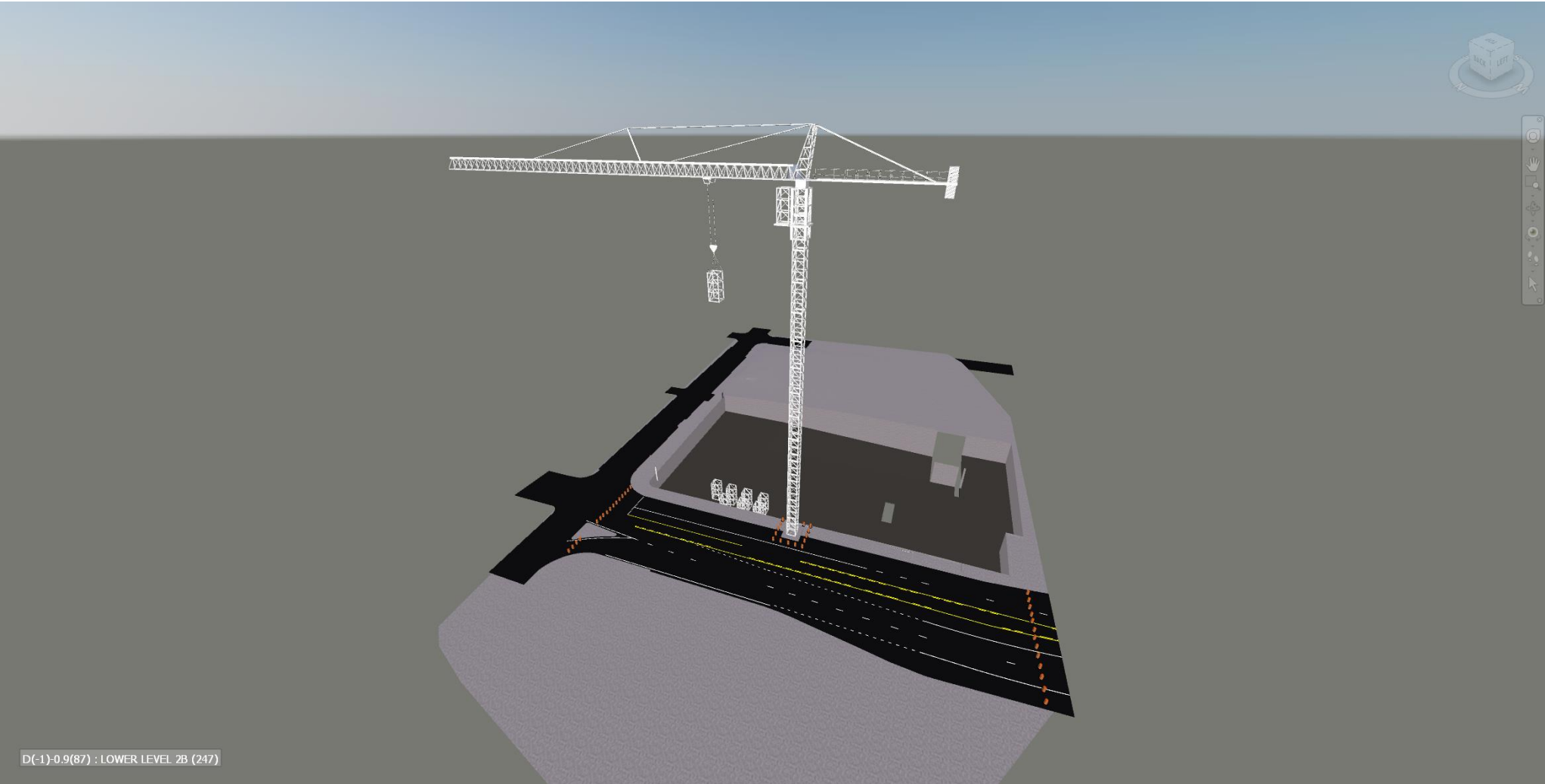
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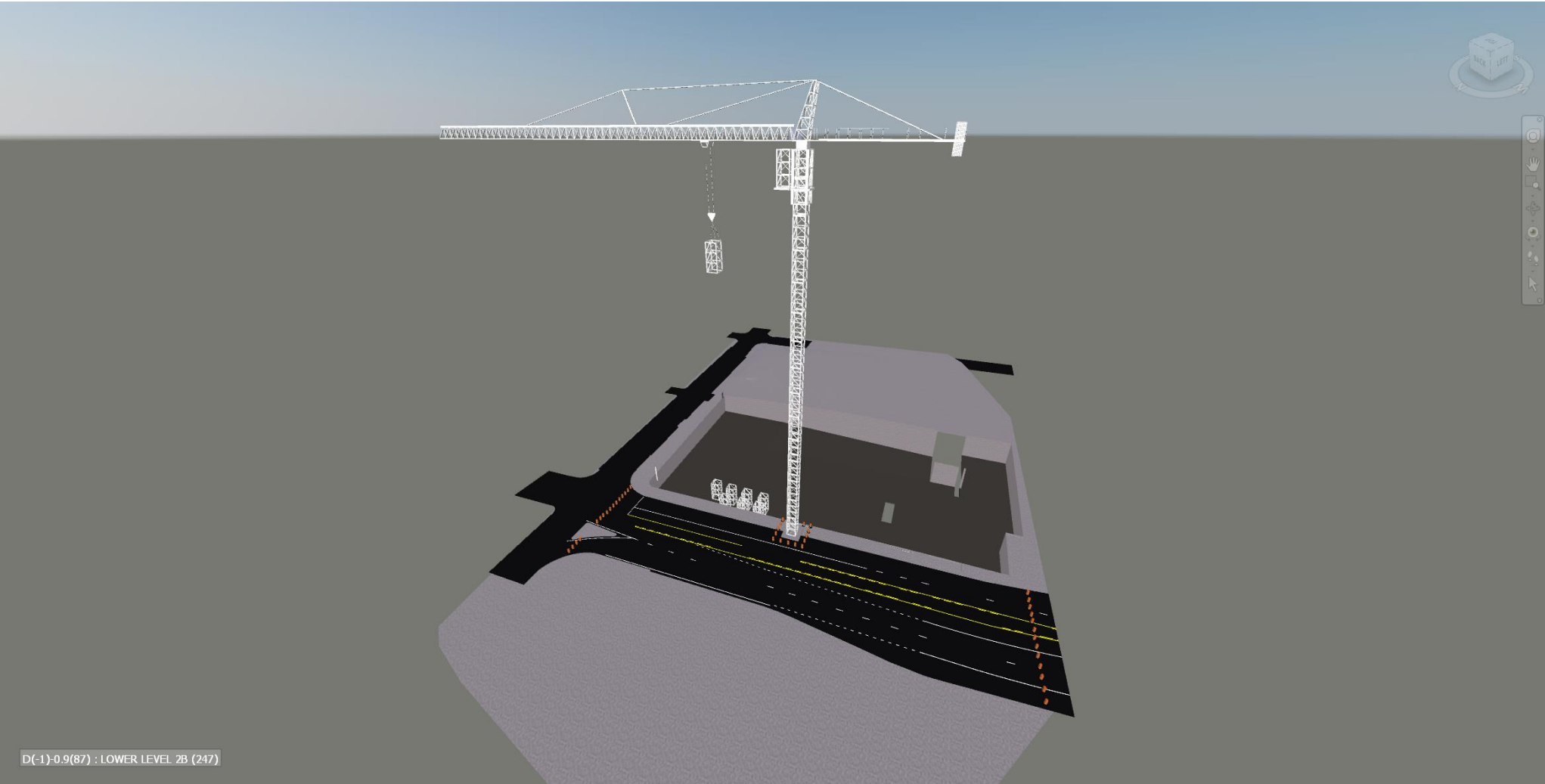
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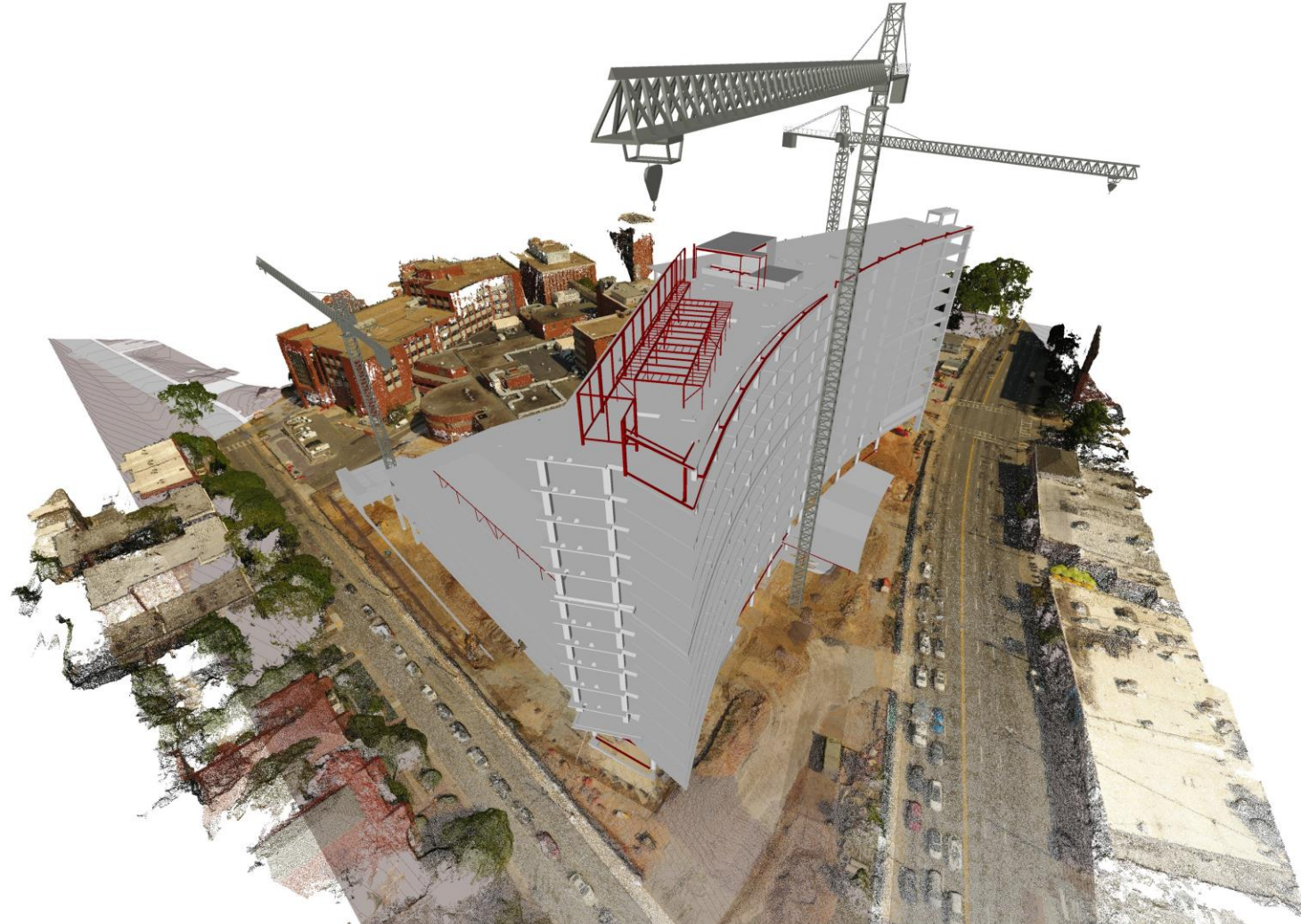
Increased Site Accuracy



Communicating a Plan

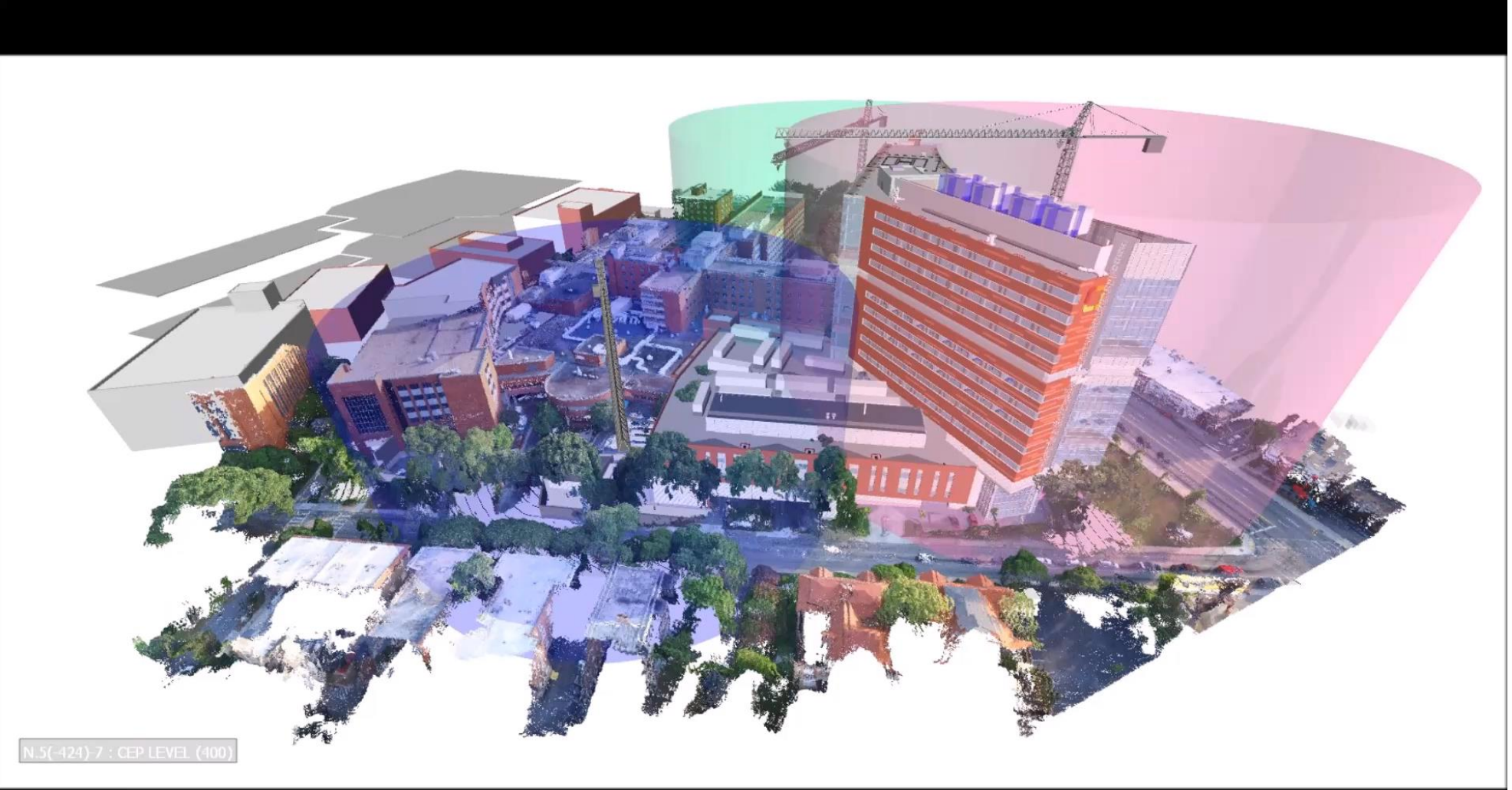
Defining New Deliverables

Increased Model Accuracy

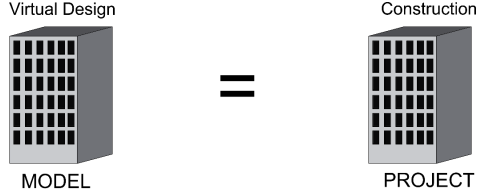


Moving Forward – Future Plans

Power of Data



N.5(-424)-7 : CEP LEVEL (400)



Moving Forward – Future Plans

Interact with Virtual Reality

