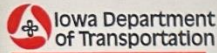




Paving the Digital Road: Iowa's E-Construction Evolution and Future

Matthew Miller

E-Construction



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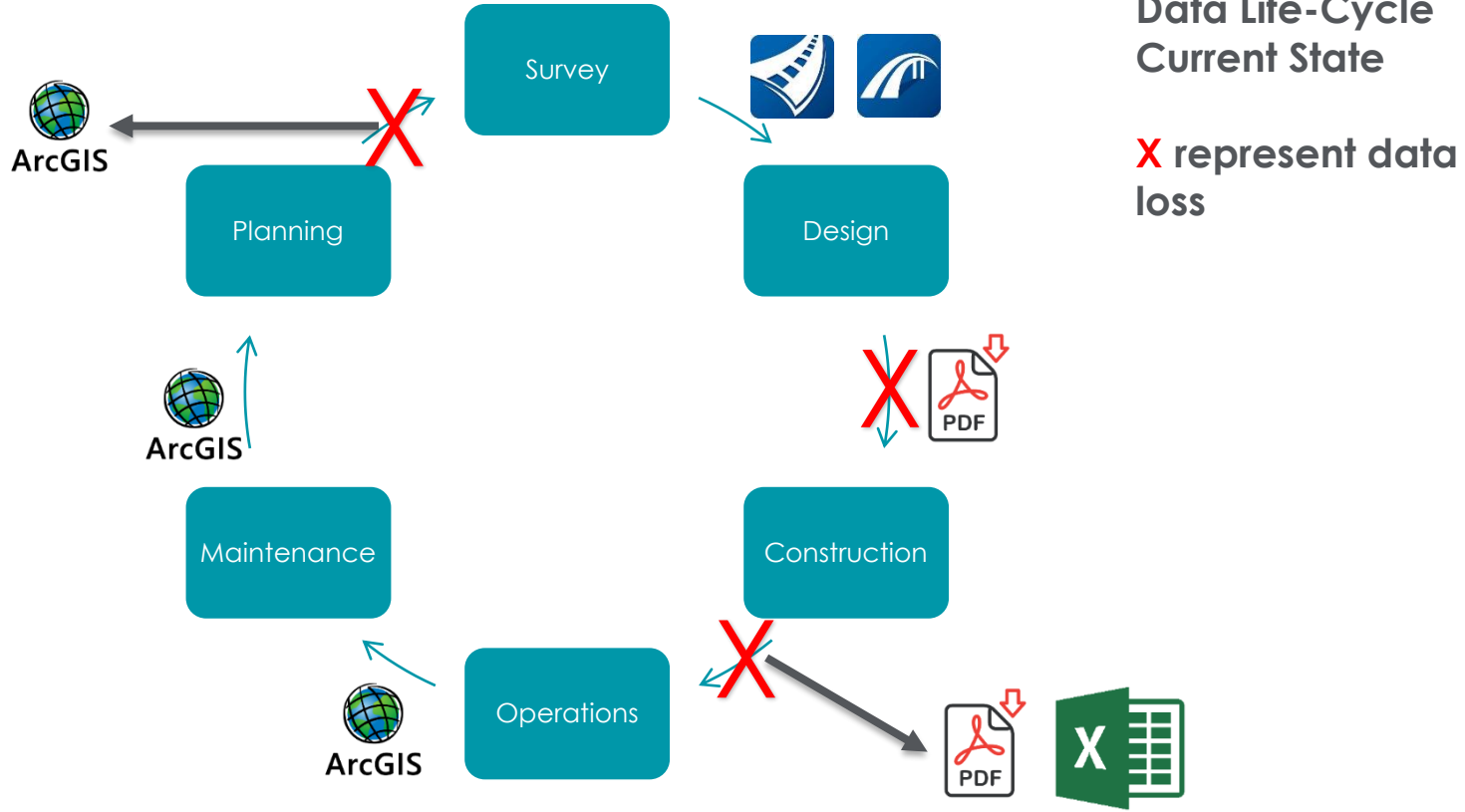


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E-Construction



Iowa DOT
Data Life-Cycle
Current State

X represent data
loss

E-Construction

Browser tabs: Excel T, DOTM, Macro, GIS Fu, Can't, Excel, Macro, Excel T, G vgis, B Twin, Absen, alaban, New t, R E-Mail, VertiG, CME G

Address bar: <https://egis.iowadot.gov/geocortex/webviewer/?app=83a54e74419046cd94abcd4e024e0644>

Navigation: I want to... Search for ...

Tools: Layers Legend Workflow Tools Result Draw Measure Clear Markup Clear Results Identify Initial View Import from CSV Import from Shapefile Import from XLSV Save Project Load Project Get Sharing link

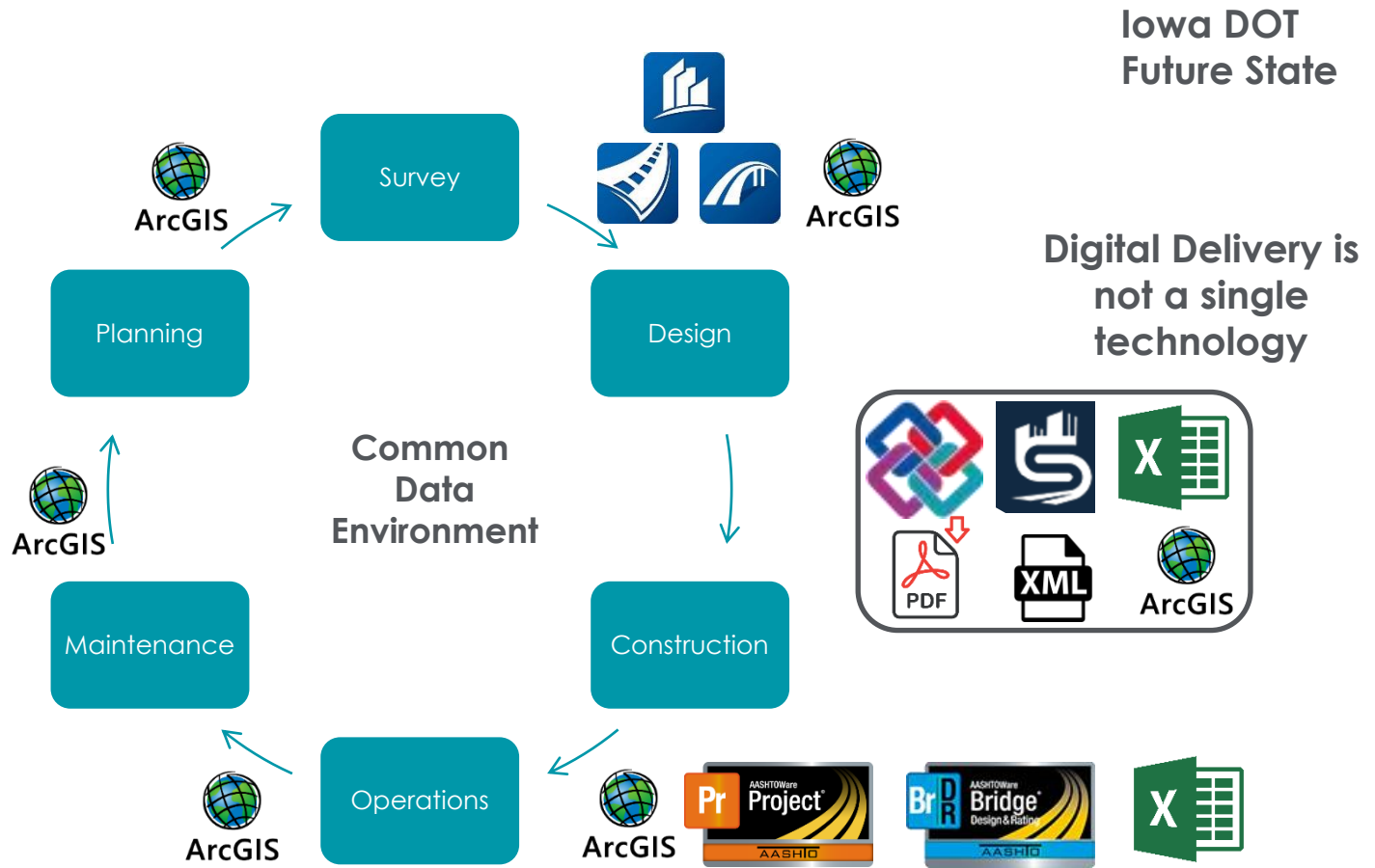
Search results: Your search is complete. Click to open. [Back] [Next] [Close]

Map details: Scale: 7723, 0 600 ft. X/Y (WKID: 102100) X: -10417684.49 Y: 5108598.49

Footer: Eri, NASA, NGA, USGS, FEMA | Eri Community, Map Contributors, City of Des Moines, IA, Des Moines Area Regional GIS, Iowa DNR, © OpenStreetMap, Microsoft, Eri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau/USDA/How... Powered by Eri

System tray: 31°F Mostly cloudy, 3:58 PM 12/27/2022

E-Construction



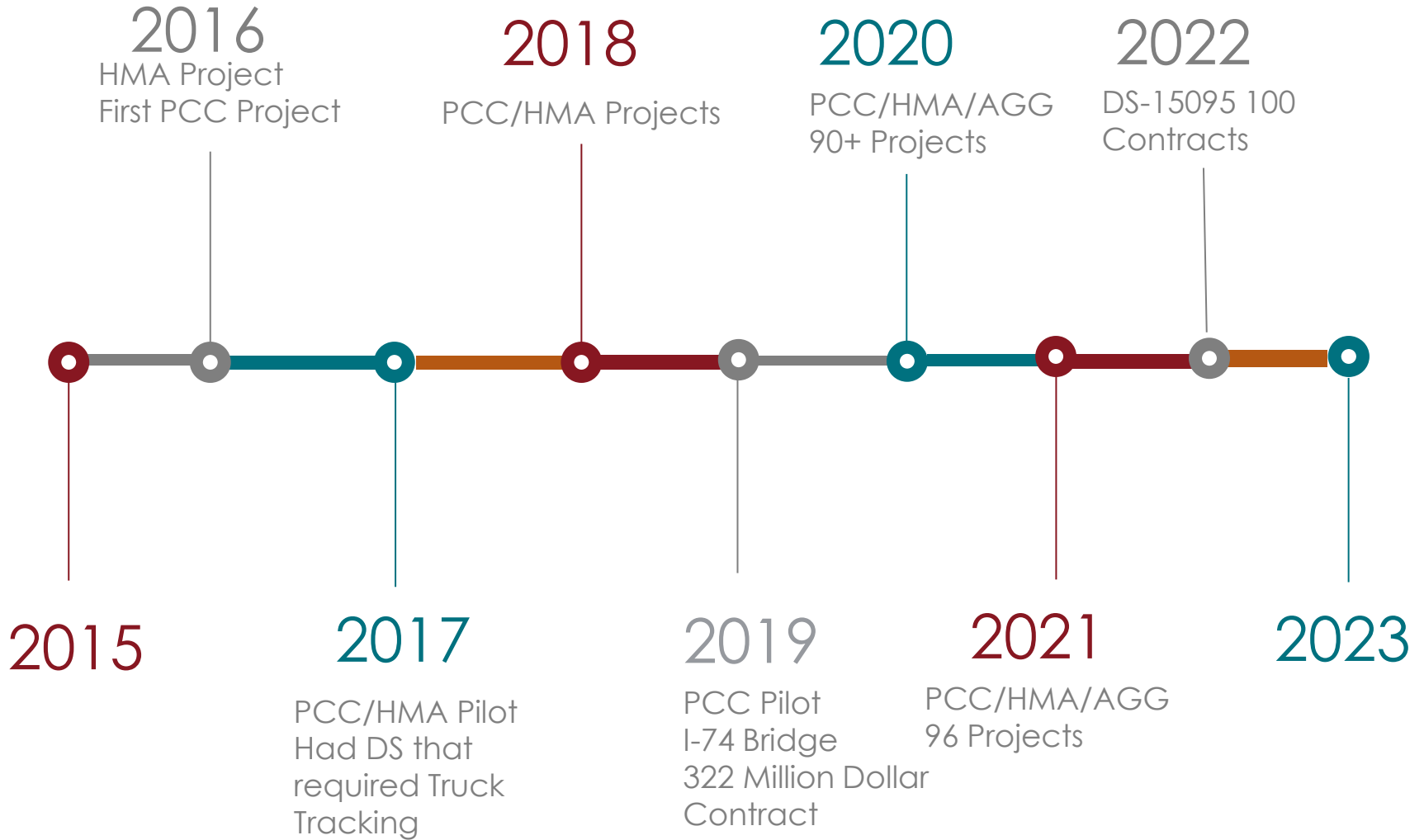
Initiatives

- E-ticketing
- GIS Maps
- 3D projects
- Drone/LiDAR mapping
- Digital Asbuilts
- Technology pilots



E-Construction

E-ticket timeline





E-ticketing platforms



Information on an HMA E-ticket

1. Date
2. Iowa DOT Project number
3. Contractor
4. Supplier
5. Unique truck ID
6. Plant/Scale
7. Truck status times
8. Type of material
- 9.-11. Gross/Tare/Net
12. Mix Design number

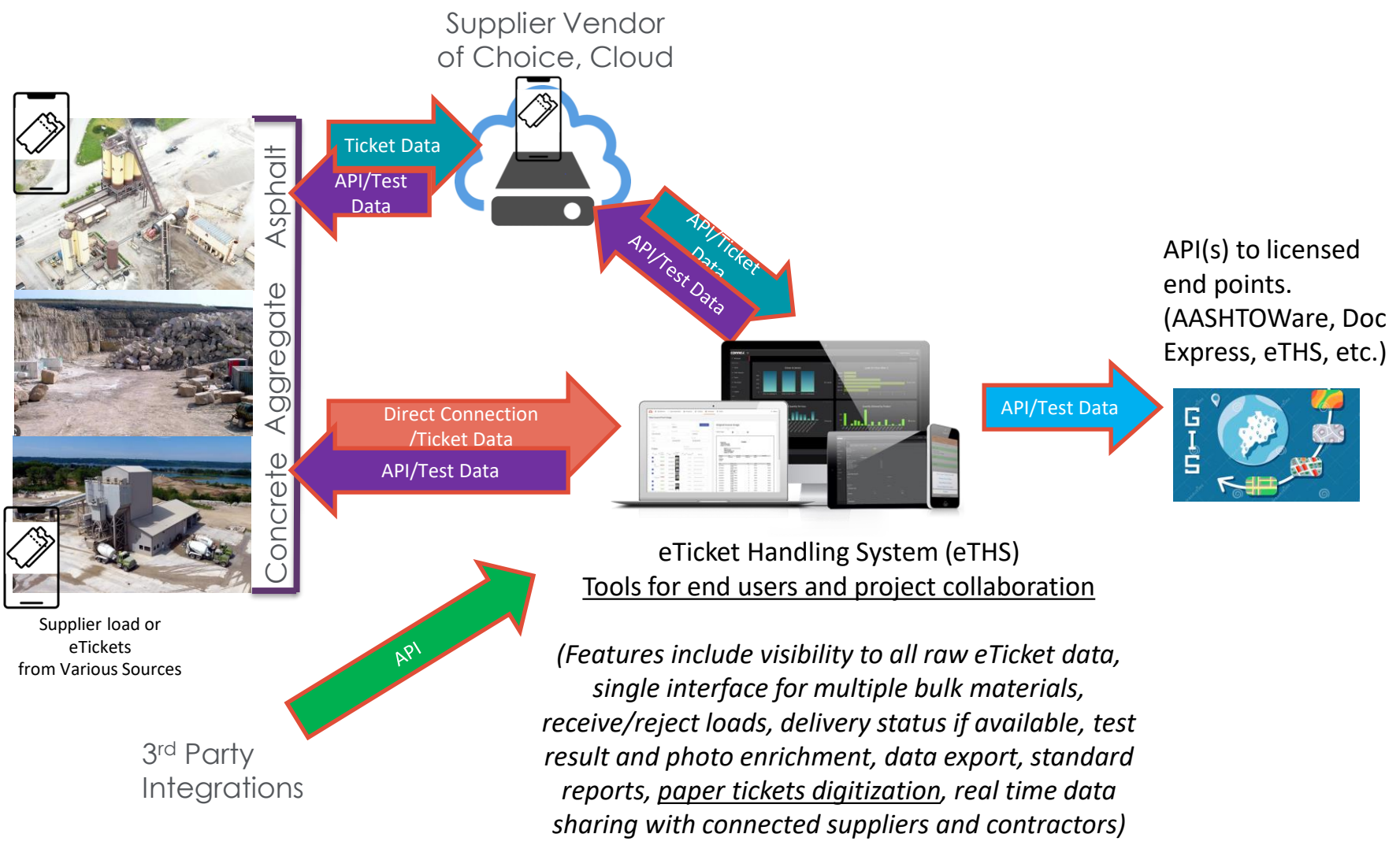
Information on a PCC E-ticket

1. Date
2. Iowa DOT Project number
3. Contractor
4. Supplier
5. Unique truck ID
6. Plant/Scale
7. Truck status times
8. Wet weights
9. Dry weights
10. Water in Agg
11. Total water
12. W/C ratio
13. Max W/C ratio
14. Allowable water to add.
15. Admixture Retarder and weights.
16. Water reducer and weights.
17. Air entrainment and weights.
18. Special performance admixtures and weights.
19. Concrete fibers.
20. Cementitious material and weights.
21. CPI name and cert number.

Currently
capable of
getting 275
lines of data
fields on E-
ticket

237	Test Data Slump Result 1		4.0
238	Test Data Slump Result 1 Unit of Measure	INH	
239	Test Data Slump Result 2		
240	Test Data Slump Result 2 Unit of Measure		
241	Test Data Material Temperature Result 1		79
242	Test Data Material Temperature Result 1 Unit of Measure	FAH	
243	Test Data Material Temperature Result 2		
244	Test Data Material Temperature Result 2 Unit of Measure		
245	Test Data Ambient Temperature Result 1		
246	Test Data Ambient Temperature Result 1 Unit of Measure		
247	Test Data Ambient Temperature Result 2		
248	Test Data Ambient Temperature Result 2 Unit of Measure		
249	Test Data Humidity		
250	Test Data Humidity Unit of Measure		
251	Test Data Wind		
252	Test Data Wind Unit of Measure		
253	Test Data Efflux		
254	Test Data Efflux Unit of Measure		
255	Test Data Evaporation Rate		
256	Test Data Evaporation Rate Unit of Measure		
257	Test Data Latitude Position		42.0300216
258	Test Data Longitude Position		-93.612787
259	Invoice Code		
260	Load #		1
261	Product Cost Code		
262	Haul Cost Code		
263	Product Unit Cost		
264	Haul Unit Cost		
265	Mix ID		
266	Specific Gravity		
267	Certification Statement		
268	Address	I280	
269	Address 2		
270	City	DAVENPORT	
271	State / Province	IA	
272	Postal Code		
273	Country	US	
274	Instructions		
275	Delivery Option		
276			

E-Construction



eTicket Handling System (eTHS)
Tools for end users and project collaboration

(Features include visibility to all raw eTicket data, single interface for multiple bulk materials, receive/reject loads, delivery status if available, test result and photo enrichment, data export, standard reports, paper tickets digitization, real time data sharing with connected suppliers and contractors)

Internet Connection

- Iowa DOT along with Local Systems Bureau was approved for STIC funds to test Cell phone boosters.

Internet Connection



From: Van Tassel, Todd <Todd.VanTassel@iowadot.us>
Sent: Thursday, January 12, 2023 1:15:11 PM
To: Wilkinson, Cedric <Cedric.Wilkinson@iowadot.us>
Subject: Cell booster test

Cedric,

I stopped at a place on 52 that my cell phone was showing (no service) and tried to get signed into Connex with no luck. I connected to the cell booster and signed into Connex with no issues and it was at the same speed as normal. I did need to go into the settings on my phone to get connected to the booster sometimes. Also for training purpose, the phone goes from no service to showing Verizon internet when you get connected.

Thanks



TODD VAN TASSEL
HIGHWAY TECH. SENIOR
DAVENPORT CONSTRUCTION OFFICE

iowadot.gov

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Cell: 563-349-5745

todd.vantassel@iowadot.us

 Iowa Department of Transportation

 @iowadot

Dashboard for the devices

netcloud™ bycradlepoint

Account: Iowa Department of Transportation | Welcome, Matthew Miller

Search

Devices

Routers | Wi-Fi APs | Network Interfaces | Rogue Wi-Fi APs

Configuration | NetCloud OS | Commands | Remote Connect | Move | Settings | Export | Filter: All

	Name	Description	Asset Identifier ↑	Product	MAC Address	IP Address	Group	NetCloud OS	Configuration	NCOS Status	Account
<input type="checkbox"/>	IBR900-8f7	G07664	District 1	IBR900	00:30:44:72:98:F7	166.226.18.66		7.22.80 (2022-0...	Synced	Complete	Iowa Depart...
<input type="checkbox"/>	IBR900-8fd	G07668	District 2	IBR900	00:30:44:72:98:FD	166.226.18.73		7.22.80 (2022-0...	Synced	Complete	Iowa Depart...
<input type="checkbox"/>	G07666	G07666	District 3	IBR900	00:30:44:72:98:CA	166.226.18.79		7.22.80 (2022-0...	Synced	Complete	Iowa Depart...
<input type="checkbox"/>	G07663	G07663	District 4	IBR900	00:30:44:72:99:72	166.226.18.85		7.22.80 (2022-0...	Synced	Complete	Iowa Depart...
<input type="checkbox"/>	IBR900-8d9	G07667	District 5	IBR900	00:30:44:72:98:D9	166.226.18.81		7.22.80 (2022-0...	Synced	Complete	Iowa Depart...
<input type="checkbox"/>	G07669	G07669	District 6	IBR900	00:30:44:72:74:94	166.226.18.94		7.22.80 (2022-0...	Synced	Complete	Iowa Depart...
<input type="checkbox"/>	IBR900-888	G07665	Local Systems	IBR900	00:30:44:72:98:88	166.226.18.90		7.22.80 (2022-0...	Synced	Complete	Iowa Depart...
<input type="checkbox"/>	G07662	G07662	Local Systems	IBR900	00:30:44:72:98:F1	166.226.18.75		7.22.80 (2022-0...	Pending	Complete	Iowa Depart...

Routers > IBR900-8fd



IBR900-8fd

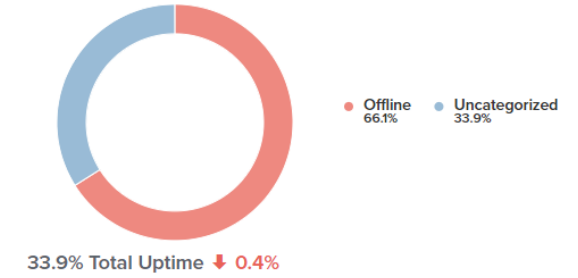
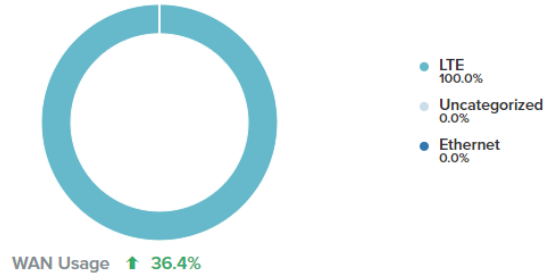
Iowa Department of Transportation • IBR900
G07668

W 1 2

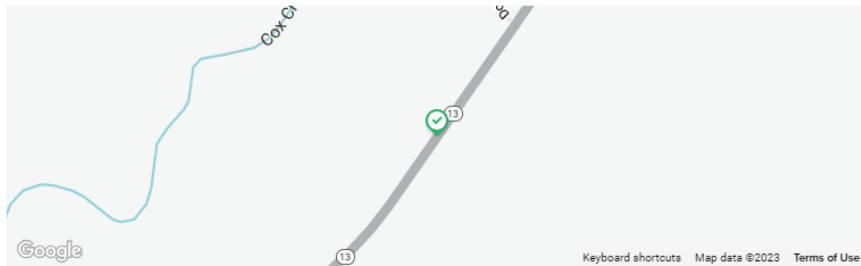
- Home
- Configuration
- Data Usage
- Health
- Troubleshooting

- Summary
- Interfaces
- GeoView
- License
- Details

Internal 1200M-B (SIM1)	MC400 1200M-B (SIM1)	MC400 1200M-B (SIM2)
LTE		



GeoView



Recent Alerts

No data to display

E-Construction



▲ DS-1XXXX



**DEVELOPMENTAL SPECIFICATIONS
FOR
PORTABLE POP-UP NETWORK ON
CONSTRUCTION PROJECT**

**Effective Date
Month 01, 2023**

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

1XXXX.01 DESCRIPTION.

- A.** This developmental specification defines the minimum requirements for portable suitcase pop-up network cases to be used in highway construction sites, equipped with dual SIM 5G mobile connectivity. The network cases shall provide reliable, high-speed wireless connectivity to support construction site inspections through digital means and safety of field staff in support of digital construction technologies.
- B.** Pop up network case shall include the following minimum requirements:
1. Rugged Case (w/CAT6 port, 12.6V input, power button)
 2. DC power cord, Wall charger, Ethernet, & Antenna cables (all pre-wired)
 3. Secure Connectivity for Network Access
 4. Mobile Dual SIM provider 5G LTE connection with two Wi-Fi radios (5 GHz and 2.4 GHz)
 5. 1 Gbps download speed; 150 Mbps upload speed where available
 6. 300 feet of expected Wi-Fi Broadcast Range
 7. FAA-compliant battery pack with up to 10 hours of life
 8. Ability to configure, manage, troubleshoot remotely with cloud management software
 9. Multiple Simultaneous Connections
 10. Advanced Threat Protection and Cloud-managed security controls
 11. Integrated antennas and external CAT6 port with POE.



15095.02 MATERIALS.

See device requirements 15095.03.

15095.03 POP-UP NETWORK DEVICE REQUIREMENTS.

Device shall meet or exceed the following specifications:

Safety Certifications: UL/CUL, CB Scheme, EN60950-1, EN 62368

Material Certifications: WEEE, RoHS, RoHS-2, California Prop 65

Case Specifications: Weatherproofing IP64

Antenna Type: Multi-MIMO

Leads: 2x Cellular, 2x Wi-Fi, 1x GPS

Cellular Type: 4G | CBRS | LTE (617-960MHz / 1710-6000MHz)

Bands: B2 B4 B5 B12 B14 B17 B25 B26 B29 B30 B41 B66 B71 n5 n25 n41 n66 n71 B2 B4 B5 B12 B14

B17 B29 B30 B48 B66 n5 B2 B4 B5 B12 B14 B17 B29 B30 B66

5G NR Bands: n77 n78 n79 n77 n78 n79 n77 n78 n79

Wi-Fi Frequency Range: 2.4GHz - 7GHz (Concurrent)

Isolation 4G 5G Elements: >10dB

Isolation Wi-Fi Elements: >12db

Correlation Co-Efficient 4G/5G Elements: <0.2

Correlation Co-Efficient Wi-Fi Elements: <0.2

Nominal Impedance: 50Ω

Frequency Range: 1562-1612MHz

LNA Gain: 29dB ± 2dB

VSWR: <2.0:1

Out of Band Rejection: >45dB (@ > +/- 100MHz f)

Typical Noise Figure: <-2dB

Notch Filter Rejection: @787MHz 24dB

Operating Voltage: 3-5V DC

Typical Current: 15mA

Antenna Housing: High Impact UV Stable ABS Polymer

Connector Type: SMA

Operating Temp: -40° / +80°C (-40° / +176°F) or better

Battery Specifications:

FAA-compliant Battery Pack (up to 10 hrs. life)

Battery Type Lithium-Ion

Output 12V

Capacity 10,000 mAh

Short-Circuit Protection

Over-Current Protection

Overcharging Protection

Discharge Protection

15095.04 METHOD OF MEASUREMENT.

The Engineer will count the pop-up network devices, furnished to inspection staff, according to this specification, as required by the contract documents.

15095.05 BASIS OF PAYMENT.

- A. Payment for each network case will be the contract unit price.
- B. Payment is full compensation for furnishing, delivery, and maintaining service to the pop-up network for the duration of the project.

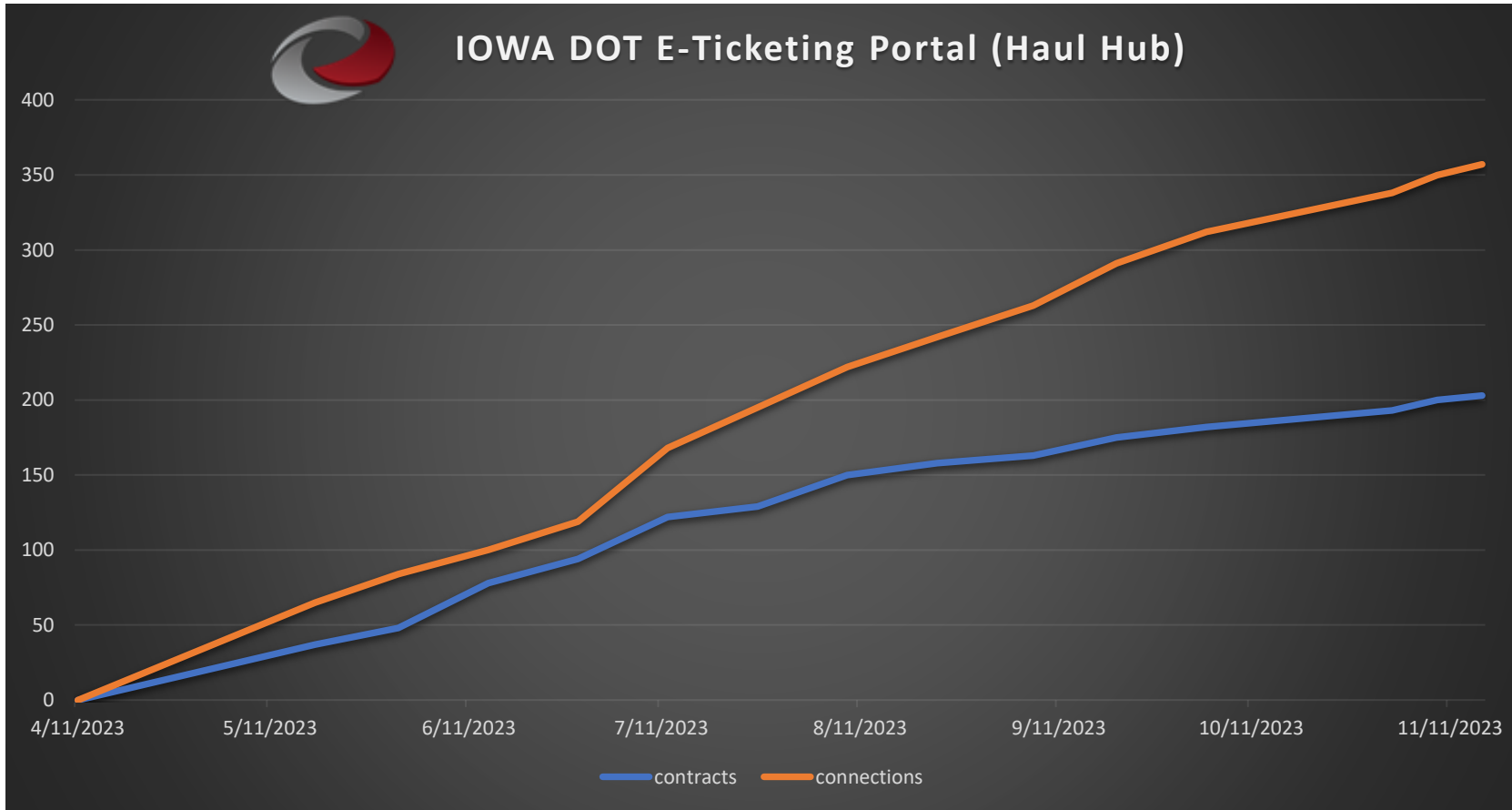


E-Construction

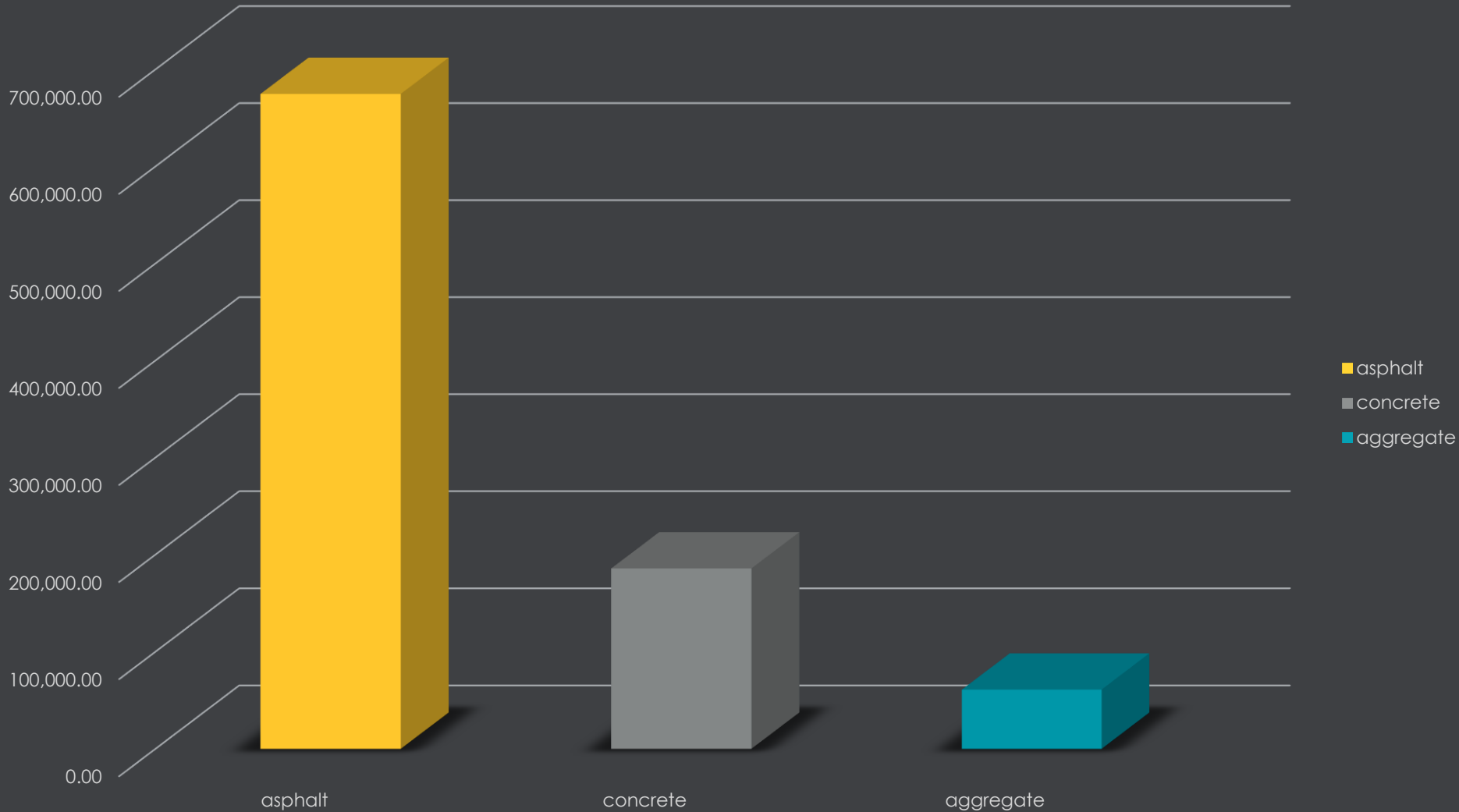
- Last year for reference...



E-Construction



Material Tracked by e-Ticketing since 4/11/2023



E-Construction

Browser tabs: marriott.com/hotels/einterface/..., DOTslip, OnStation Portal

Address bar: https://app.mydotportal.com/manage-tickets/25276

Navigation: Iowa DOT Favorites, Iowa Regional Coord..., Monthly Letting Pla..., SYNCHRO Control, PIX4Dcloud, DocExpress, ThinkIQ Vision Portal, Bentley | Infrastruct..., Welcome to AASHT..., Contract Progress S..., TTCP, List of Lettings - Bi..., OnStation

Manage Tickets

Start Date: mm/dd/yyyy | End Date: mm/dd/yyyy | **Find Tickets** | Day | Night | Filter by time: ---:-- | Select All Records | Edit Columns

Drag a column here to group by column

	Ticket	Date	Truck	Hauler	Suppl	Product Description	Quantit	Load #	Gross	Tare	Net	Delivery lat/long	Project	Plar
<input checked="" type="checkbox"/>	4011	2023-09-11 5:50:37 PM CDT	k1 Mike Kulish		Heartland Asphalt	531 1/2" HMA ST Base	18.12	93	30.12	12	18.12	42.64957144 117238, -92.4459087 1122938	55239 Bremer Co. c-50	Tripoli Plant
<input checked="" type="checkbox"/>	4010	2023-09-11 5:42:10 PM CDT	11	Ayers	Heartland Asphalt	531 1/2" HMA ST Base	18.09	92	30.59	12.5	18.09	42.64953410 711982, -92.4443568 7852082	55239 Bremer Co. c-50	Tripoli Plant
<input checked="" type="checkbox"/>	4009	2023-09-11 5:36:31 PM CDT	R69 Rausch		Heartland Asphalt	531 1/2" HMA ST Base	29.19	91	39.19	10	29.19	42.64962652 198444, -92.4433627 6856518	55239 Bremer Co. c-50	Tripoli Plant
<input checked="" type="checkbox"/>	4008	2023-09-11 5:27:03 PM CDT	R62 Rausch		Heartland Asphalt	531 1/2" HMA ST Base	29.84	90	39.84	10	29.84	42.64962652 198444, -92.4433627 6856518	55239 Bremer Co. c-50	Tripoli Plant
<input checked="" type="checkbox"/>	4007	2023-09-11 5:16:01 PM CDT	1431	Heartland	Heartland Asphalt	531 1/2" HMA ST Base	22.02	89	40.02	18	22.02	42.64962652 198444, -92.4433627 6856518	55239 Bremer Co. c-50	Tripoli Plant
<input checked="" type="checkbox"/>	4006	2023-09-11 5:12:55 PM CDT	1883	Heartland	Heartland Asphalt	531 1/2" HMA ST Base	25.14	88	40.14	15	25.14	42.64962652 198444, -92.4433627 6856518	55239 Bremer Co. c-50	Tripoli Plant
<input checked="" type="checkbox"/>	4005	2023-09-11 4:58:42 PM CDT	30 Jose Rincon		Heartland Asphalt	531 1/2" HMA ST Base	17.56	87	40.06	22.5	17.56	42.64952012 0906885, -92.4368320 4859487	55239 Bremer Co. c-50	Tripoli Plant
<input checked="" type="checkbox"/>	4004	2023-09-11 4:51:12 PM CDT	8 A)									4952012 3885, -92.4368320 4859487	55239 Bremer Co. c-50	Tripoli Plant

Assign Pay Codes | **Mark Delivered** | **Mark Rejected** | Flag | Download Slips | Add Note | Clear All

E-Construction

File Edit View History Bookmarks Profiles Tab Window Help

Browser tabs: File, (2) x, (2) x, (2) x, esri GIS Ma, Your re, Gallery, Gallery, low, X, Iowa D, Iowa D, Iowa D, Iowa D, My Me, Iowa D, Iowa D, NHSX, Iowa D, HaulHu, HaulHu

Address bar: haulhub.maps.arcgis.com/home/webmap/viewer.html?layers=45d599a911604fb9bfe6c24851bf61ee

Page title: Avalanche

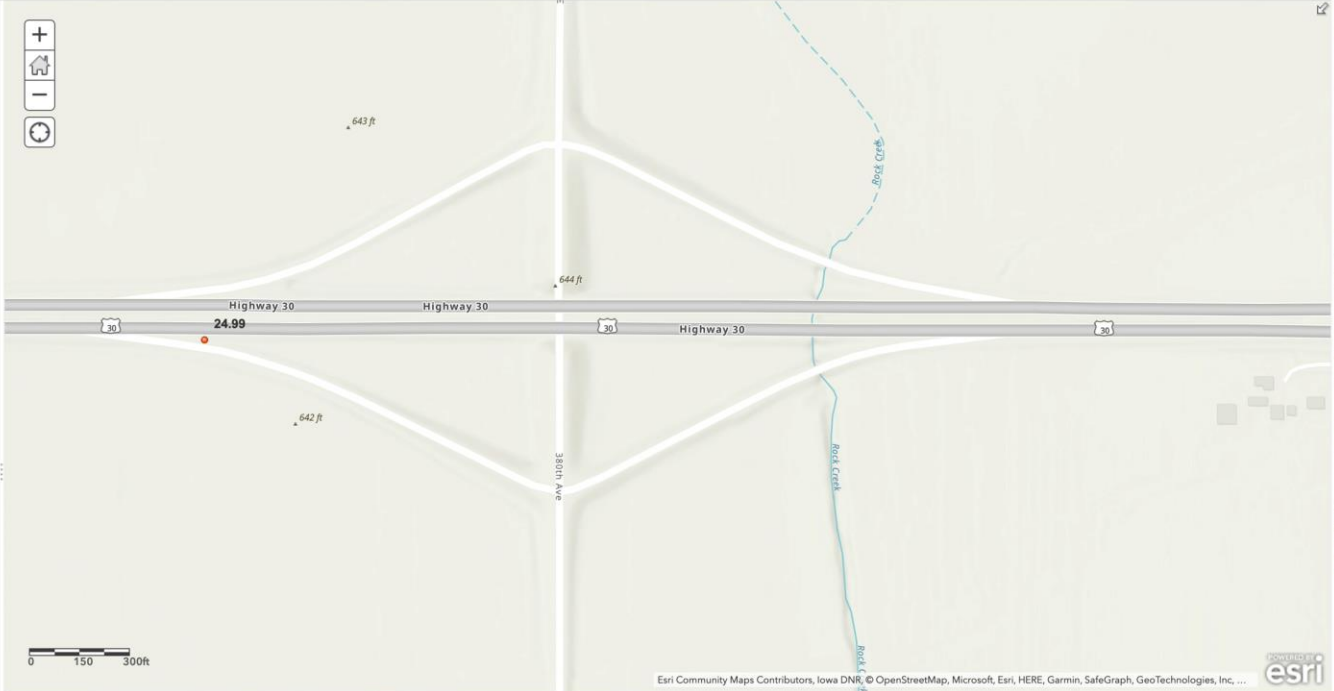
Home | Iowa DOT ESRI Time Scale v3 Open in Map Viewer | New Map | Matthew

Details | Add | Basemap | Analysis Save | Share | Print | Directions | Measure | Bookmarks | Find address or place

About | Content | Legend

Contents

- Iowa DOT ESRI Time Scale v3
- Topographic



Iowa DOT ESRI Time Scale v3 (Features: 1400, Selected: 0)

Ticket Number	Air 1	Air 2	Ambient Temperature	Arrive Job	Arrive Plant	Batch Time	Begin Load	Begin Pour	Block
39,619	-	-	-	-	-	-	-	-	-
39,618	-	-	-	-	-	-	-	-	-

E-Construction

The screenshot displays an ArcGIS Enterprise web map viewer interface. The browser window at the top shows the URL: https://testgis.iowadot.gov/portal/home/webmap/viewer.html?url=https%3A%2F%2Ftestgis.iowadot.gov%2Fagshost%2Frest%2Fservices%2FConstruction%2FE_Ticket%2FFeatureServer%2F0&source=sd. The map area shows a street grid with 128th St and 128th St labeled. Numerous blue dots are scattered across the map, representing E-Ticket locations. A search bar in the top right contains the text "Find address or place". The left sidebar includes a "Contents" pane with a checked item "E Ticket - E TICKET WGS84" and a "Community" link. The bottom of the browser window shows the Windows taskbar with the search bar and system tray.

ESRI map for pavement

Browser address bar: <https://egis.iowadot.gov/geocortex/webviewer/?app=83a54e74419046cd94abed4e024e0644>

Map Tools: Draw, Measure, Clear Markup, Clear Results, Identify, Initial View, Import from CSV, Import from Shapefile, Import from Y1 CSV, Save Project, Load Project, Get Sharing link

Map Labels: Ontario, Ames, Napier, Kelley, Midvale, Shipley, Nevada, South Dakota Ave, South Sioux River, 510th Ave, 580th Ave, 620th Ave, 305th St, 260th St, 265th St, 280th St, E 13th St, E Lincoln Way, Lincoln Highway, X Ave

Object IDs: 03511111 75112 7285, 03021150 82151 3885, 03512110 24111 7585, 03511105 79111 7585

Properties Panel:

OBJECTID: 196	ORIGKEY: 03511111 75112 7285
PAVEMENT MANAGE...: 2021	ROUTE ID: S001910035N
FROM MEASURE: 111.708	TO MEASURE: 112.6739
HIGHWAY SYSTEM: 1	ROUTE: 35
DIRECTION: 1	BEGINNING MILEPO...: 111.75
ENDING MILEPOST: 112.72	PAVEMENT TYPE: 3A
DESCRIPTION: From JCT I-35/US 30 ...	CONSTRUCTION YEAR: 1988
RESURFACING YEAR: 2017	GEOMETRY LENGTH: 0.97
LANE MILES: 2.17	MAINTENANCE REGI...: 1
COUNTY NUMBER:	CITY NUMBER:

Scale: 87286 | 0 1 mi

Coordinates: X/Y (WKID: 102100) | X: -10431644.60 | Y: 5163935.88

DOT PORTAL logo

E-Construction



lassDOT 11035236 EWO - Florida Savoy Route 2

3% Complete (1,450 Tons / 4,503 Tons)

Team 33

Tickets 35

Dashboard Contract

State Project #: HSP1X-150-2(29)--3L-06

Days Worked: 23 Days

Under Construction

4 Flagged Tickets

14 Rejected Tickets

14 Voided Tickets

14 Edited Tickets

Today < > August - September 2023 Week

	24	24	24	24	24	24
5am	Maxon Corp. ID: 246344583 Qty: 50	Maxon Corp. ID: 246344583 Qty: 50				
6am	Maxon Corp. ID: 246344583 Qty: 50	Maxon Corp. ID: 246344583 Qty: 50	Maxon Corp. ID: 246344583 Qty: 50			
7am						
8am	Maxon Corp. ID: 246344583 Qty: 50	Maxon Corp. ID: 246344583 Qty: 50	Maxon Corp. ID: 246344583 Qty: 50			
9am						
0am	Maxon Corp. ID: 246344583 Qty: 50	Maxon Corp. ID: 246344583 Qty: 50	Maxon Corp. ID: 246344583 Qty: 50			
2pm		Maxon Corp. ID: 246344583 Qty: 50	Maxon Corp. ID: 246344583 Qty: 50			

Reporting **Add Order**

Check In Time & Date
 Choose Date Choose Time

Supplier
 Choose Supplier...

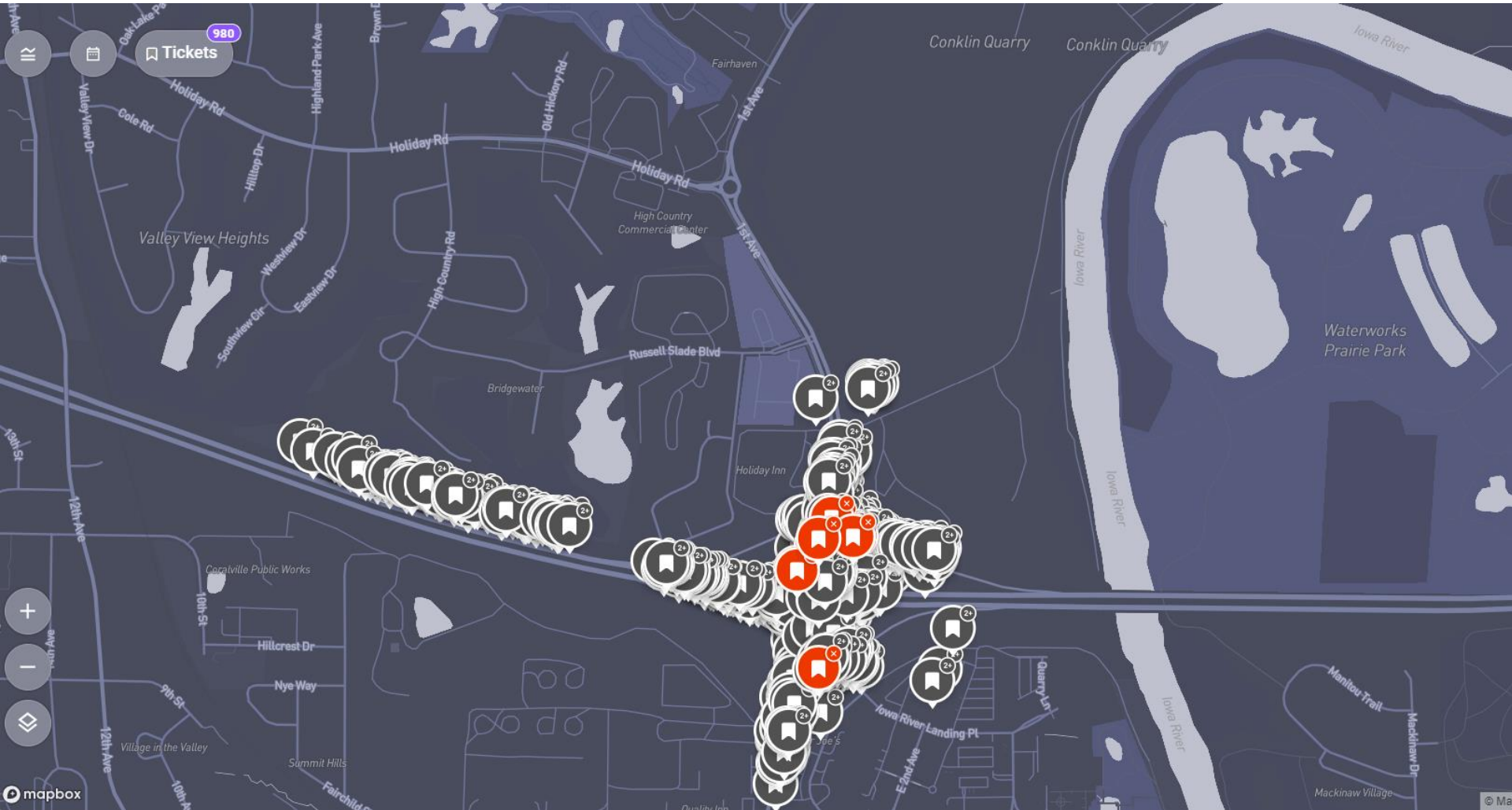
MIX ID
 Select MixID...

Quantity
 Enter quantity... TONS

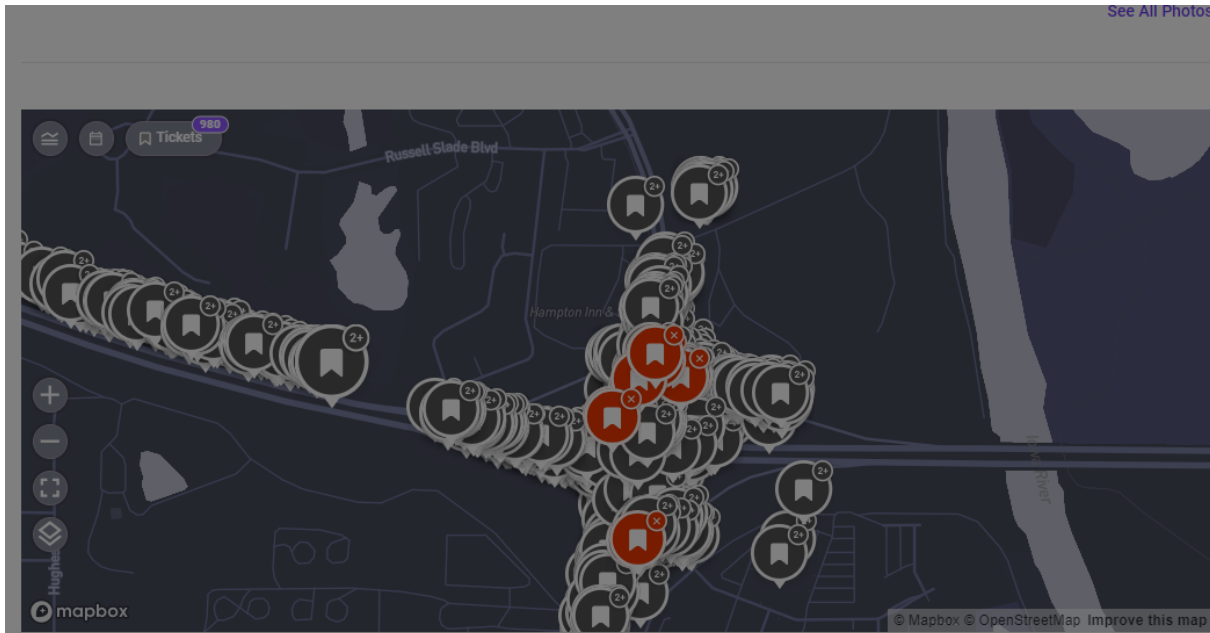
Schedule Plant Materials

! The DOT requires at least 12 hours advanced notice.

E-Construction



E-Construction



✕
63354
Download slip

Delivered

11/02/2023 8:35 AM CDT

Mark as Pending

More Actions

Ticket
Audit log
Test results
Map
Photos

Certification Statement

Raw Ticket Data
Hide Details

Plant	1	Created/Printed At	11/02/2023 08:04 AM CDT
Supplier	Streb Construction	Supplier Code	-
Customer Name	Streb	Contract #	IM-080-6(488)242-13-52
Job	I80/1St Ave Interchange	Job #	11
PO #	22-034-2	Connected DOTProject Number	IM-080-6(488)242-13-52 (489) (490) (495)
Hauler	Streb Construction	Truck	109
Product	C-3WR-C20 P	Product Description	C3 WRC20
Product Code	C-3WR-C20 P	Material	-
Allowable Water	306.01	BatchTime	2023-11-02 08:08:36.0
Design Total Water	330	Design_Slump	3
DueTime	2023-11-02 08:05:21	Load ID	6857
Load Total Weight	41,612	Max Allowable Water	306.01
Order Code	381	Water Cement Ratio	0.39
Water To Add	38.60	Load	1
Daily Total	11.00	Weighmaster	-
Net	11.00 Cubic yard	Slump	3.00
Left Plant	11/2/2023 8:07 AM CDT	Arrive Job	

30 Ticket Types

AMOUNT	MATERIAL NAME	NUMBER OF TICKETS	TICKET TYPE
3,471.00	C3 WRC20	321	Ready Mix Concrete
3,360.00	C3 WRC20	348	Ready Mix Concrete
714.00	C-4WR-C20	97	Ready Mix Concrete
579.00	C4 WR C20	78	Ready Mix Concrete
563.00	C-4WR-C20 3/4"	69	Ready Mix Concrete
456.50	701RCD DECK MIX	50	Ready Mix Concrete

✕ 61613 [Download slip](#)

Delivered 08/24/2023 7:44 AM CDT

[Mark as Pending](#) [More Actions](#)

[Ticket](#) [Audit log](#) [Test results](#) [Map](#) [Photos](#)

Batch weights [Hide Details](#)

WRDA				
Design	Target	Actual	Error %	Moisture %
3.50 oz	217.91 oz	216.00 oz	-0.88%	0.00%

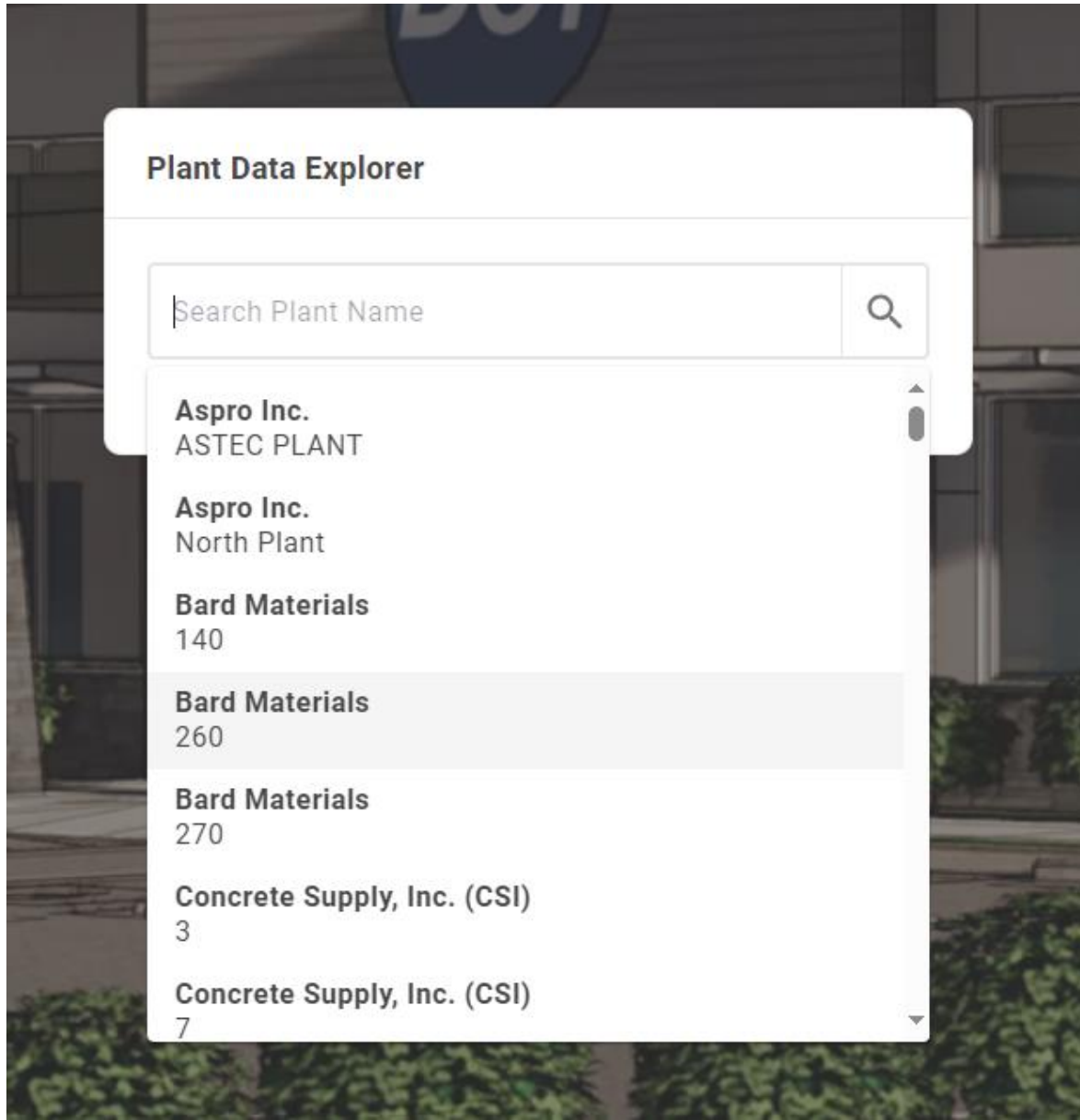
ADMIX 1				
Design	Target	Actual	Error %	Moisture %
11.00 oz	132.00 oz	132.00 oz	0.00%	0.00%

ROCK				
Design	Target	Actual	Error %	Moisture %
1569.00 lb	17873.46 lb	17940.00 lb	0.37%	0.30%

RECOVER				
Design	Target	Actual	Error %	Moisture %
0.00 oz	155.65 oz	156.00 oz	0.22%	0.00%

SAND				
Design	Target	Actual	Error %	Moisture %
1370.00 lb	15518.25 lb	15560.00 lb	0.27%	2.60%

WATER				
Design	Target	Actual	Error %	Moisture %



E-Construction

1/18/2023 - 1/18/2024 ✕ Select Time Range

Date ✕

<input type="checkbox"/>		Date ☰	Contract ☰	Ticket ☰	Product Description ☰	Tru ☰	Haule ☰	Supplier ☰
--------------------------	--	---------------------	-------------------------	-----------------------	------------------------------------	--------------------	----------------------	-------------------------

▼ 12-28-2023 (7)

<input type="checkbox"/>	<input type="checkbox"/>	12/28/2023 1:18:00 PM CST		3233176	IDOT C-4WR	59634	CSI	Concrete Supply, Inc.
<input type="checkbox"/>	<input type="checkbox"/>	12/28/2023 12:48:00 PM CST		3233171	IDOT C-4WR	59787	CSI	Concrete Supply, Inc.
<input type="checkbox"/>	<input type="checkbox"/>	12/28/2023 12:06:00 PM CST		3233163	IDOT C-4WR	59885	CSI	Concrete Supply, Inc.
<input type="checkbox"/>	<input type="checkbox"/>	12/28/2023 11:20:00 AM CST		3233155	IDOT C-4WR	59898	CSI	Concrete Supply, Inc.
<input type="checkbox"/>	<input type="checkbox"/>	12/28/2023 10:47:00 AM CST		3233152	IDOT C-4WR	59847	CSI	Concrete Supply, Inc.
<input type="checkbox"/>	<input type="checkbox"/>	12/28/2023 10:03:00 AM CST		3233142	IDOT C-4WR	59634	CSI	Concrete Supply, Inc.
<input type="checkbox"/>	<input type="checkbox"/>	12/28/2023 9:23:00 AM CST		3233136	IDOT C-4WR	59898	CSI	Concrete Supply, Inc.

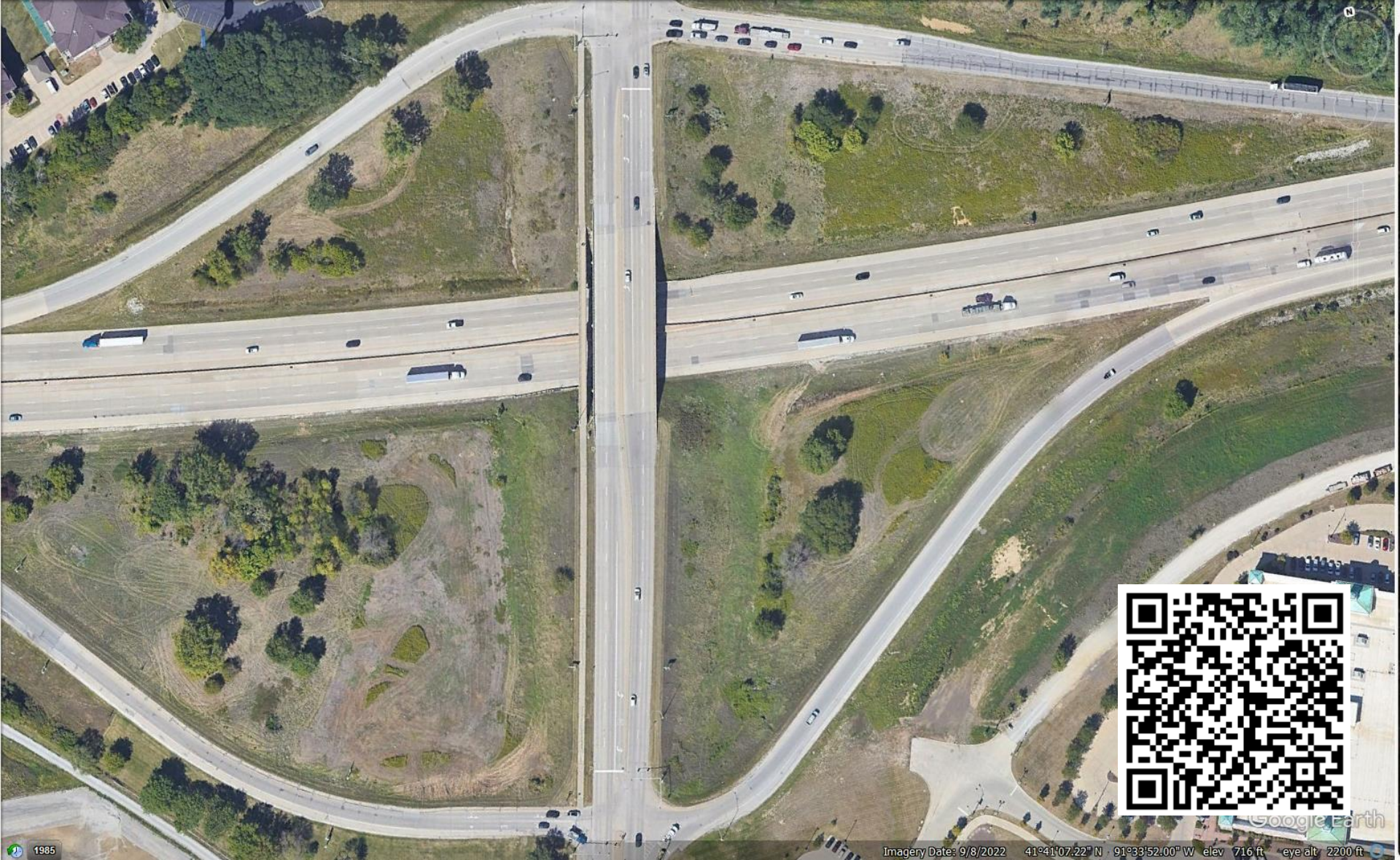
▶ 12-27-2023 (6)

▶ 12-22-2023 (5)

▶ 12-21-2023 (5)

▶ 12-19-2023 (2)

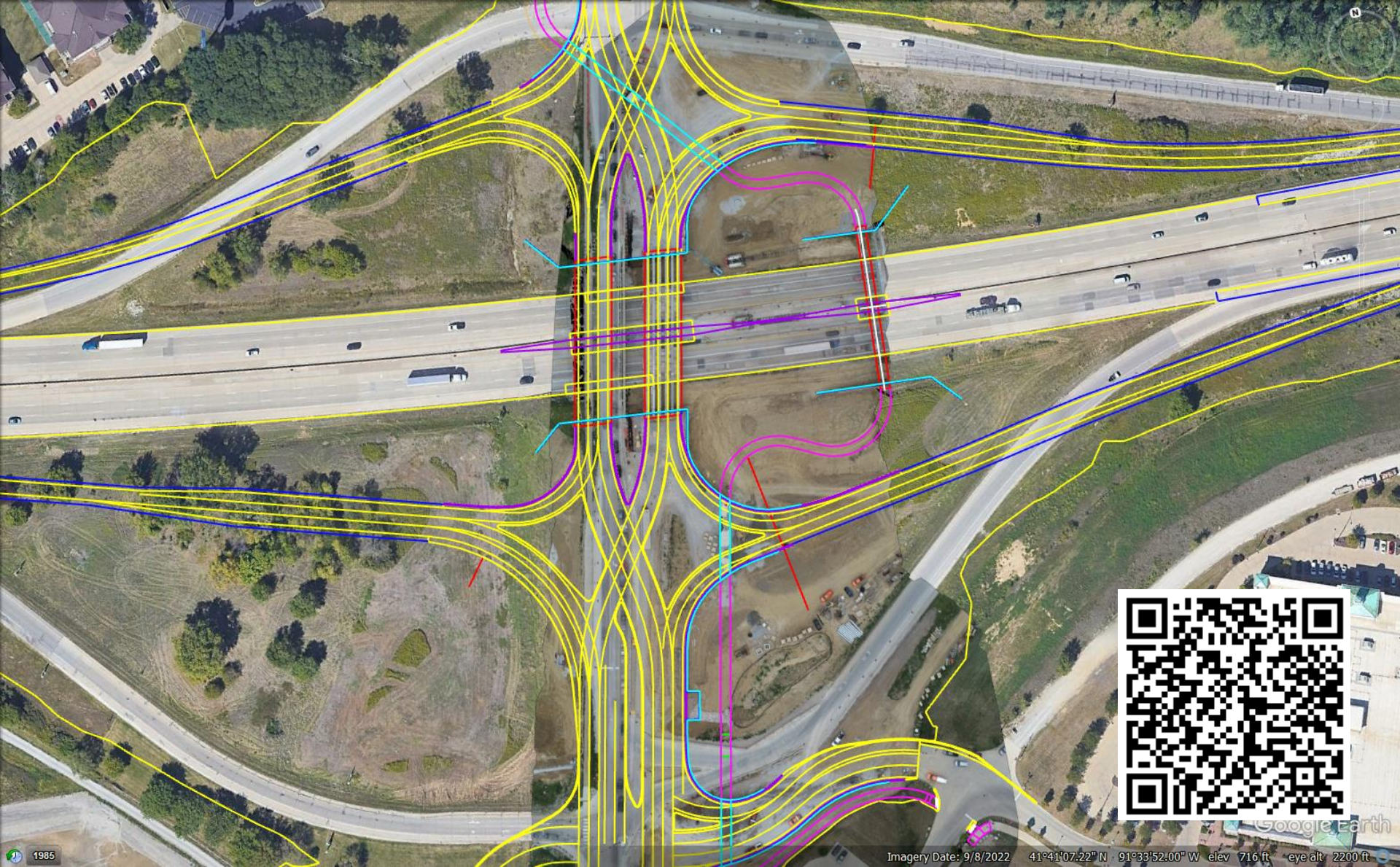
E-Construction

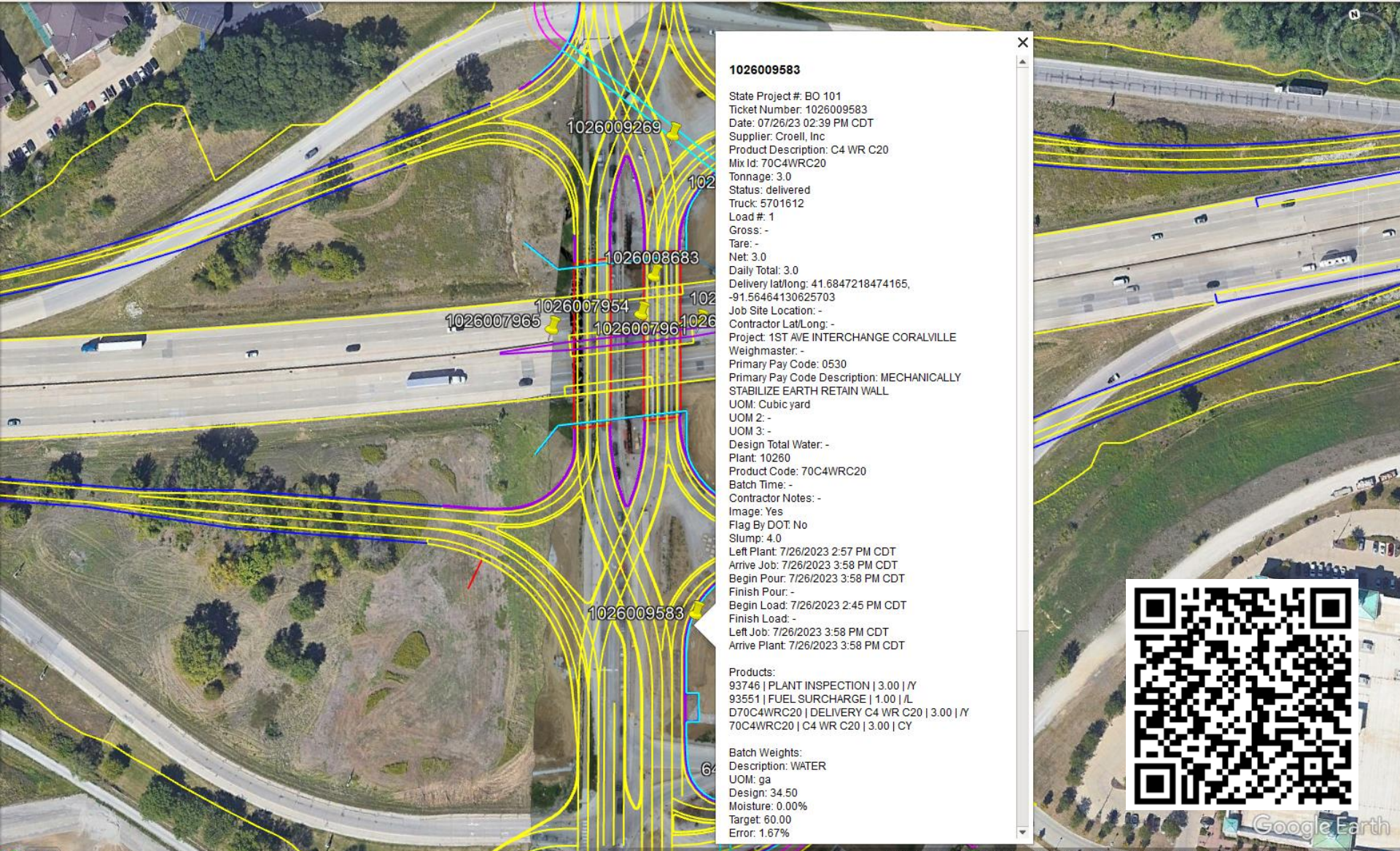


E-Construction



E-Construction





1026009583

State Project #: BO 101
 Ticket Number: 1026009583
 Date: 07/26/23 02:39 PM CDT
 Supplier: Croell, Inc
 Product Description: C4 WR C20
 Mix Id: 70C4WRC20
 Tonnage: 3.0
 Status: delivered
 Truck: 5701612
 Load #: 1
 Gross: -
 Tare: -
 Net: 3.0
 Daily Total: 3.0
 Delivery lat/long: 41.6847218474165,
 -91.56464130625703
 Job Site Location: -
 Contractor Lat/Long: -
 Project: 1ST AVE INTERCHANGE CORALVILLE
 Weighmaster: -
 Primary Pay Code: 0530
 Primary Pay Code Description: MECHANICALLY
 STABILIZE EARTH RETAIN WALL
 UOM: Cubic yard
 UOM 2: -
 UOM 3: -
 Design Total Water: -
 Plant: 10260
 Product Code: 70C4WRC20
 Batch Time: -
 Contractor Notes: -
 Image: Yes
 Flag By DOT: No
 Slump: 4.0
 Left Plant: 7/26/2023 2:57 PM CDT
 Arrive Job: 7/26/2023 3:58 PM CDT
 Begin Pour: 7/26/2023 3:58 PM CDT
 Finish Pour: -
 Begin Load: 7/26/2023 2:45 PM CDT
 Finish Load: -
 Left Job: 7/26/2023 3:58 PM CDT
 Arrive Plant: 7/26/2023 3:58 PM CDT

Products:
 93746 | PLANT INSPECTION | 3.00 | /Y
 93551 | FUEL SURCHARGE | 1.00 | /L
 D70C4WRC20 | DELIVERY C4 WR C20 | 3.00 | /Y
 70C4WRC20 | C4 WR C20 | 3.00 | /CY

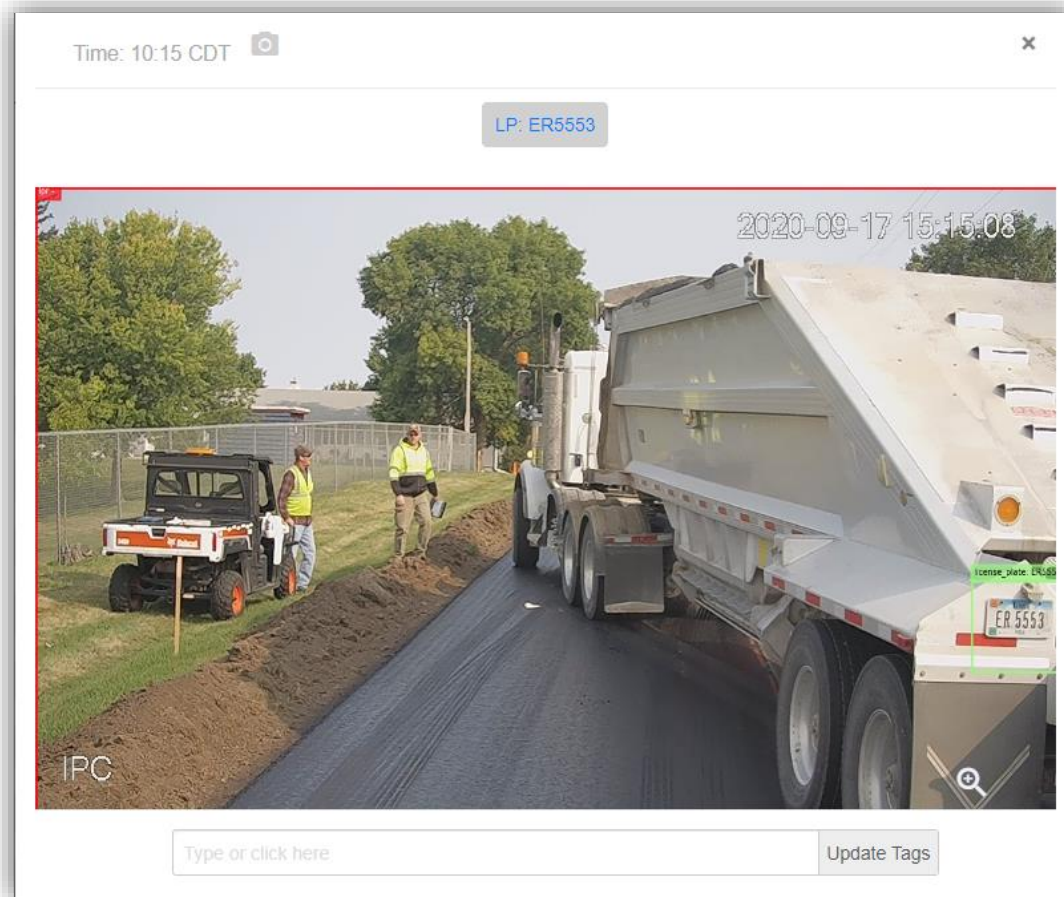
Batch Weights:
 Description: WATER
 UOM: ga
 Design: 34.50
 Moisture: 0.00%
 Target: 60.00
 Error: 1.67%



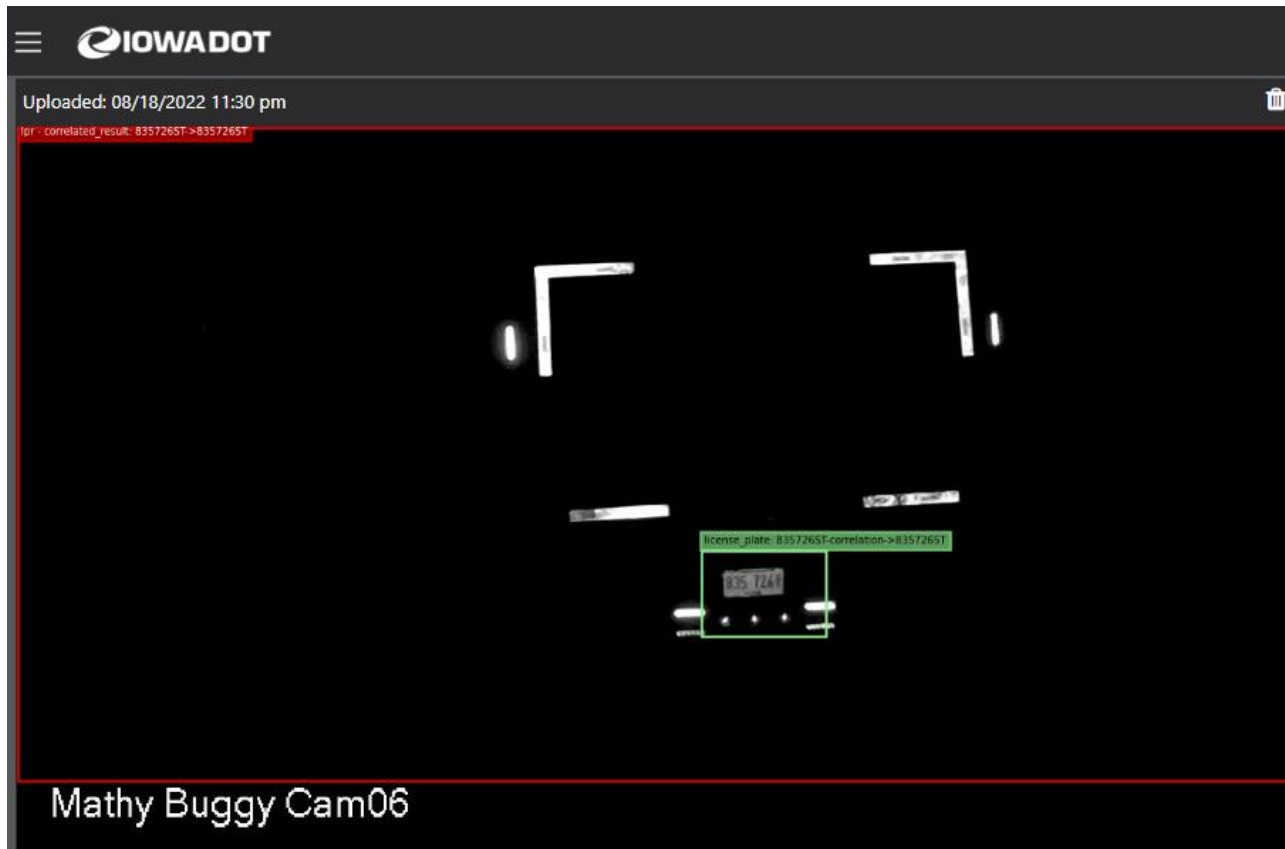
At the Plant

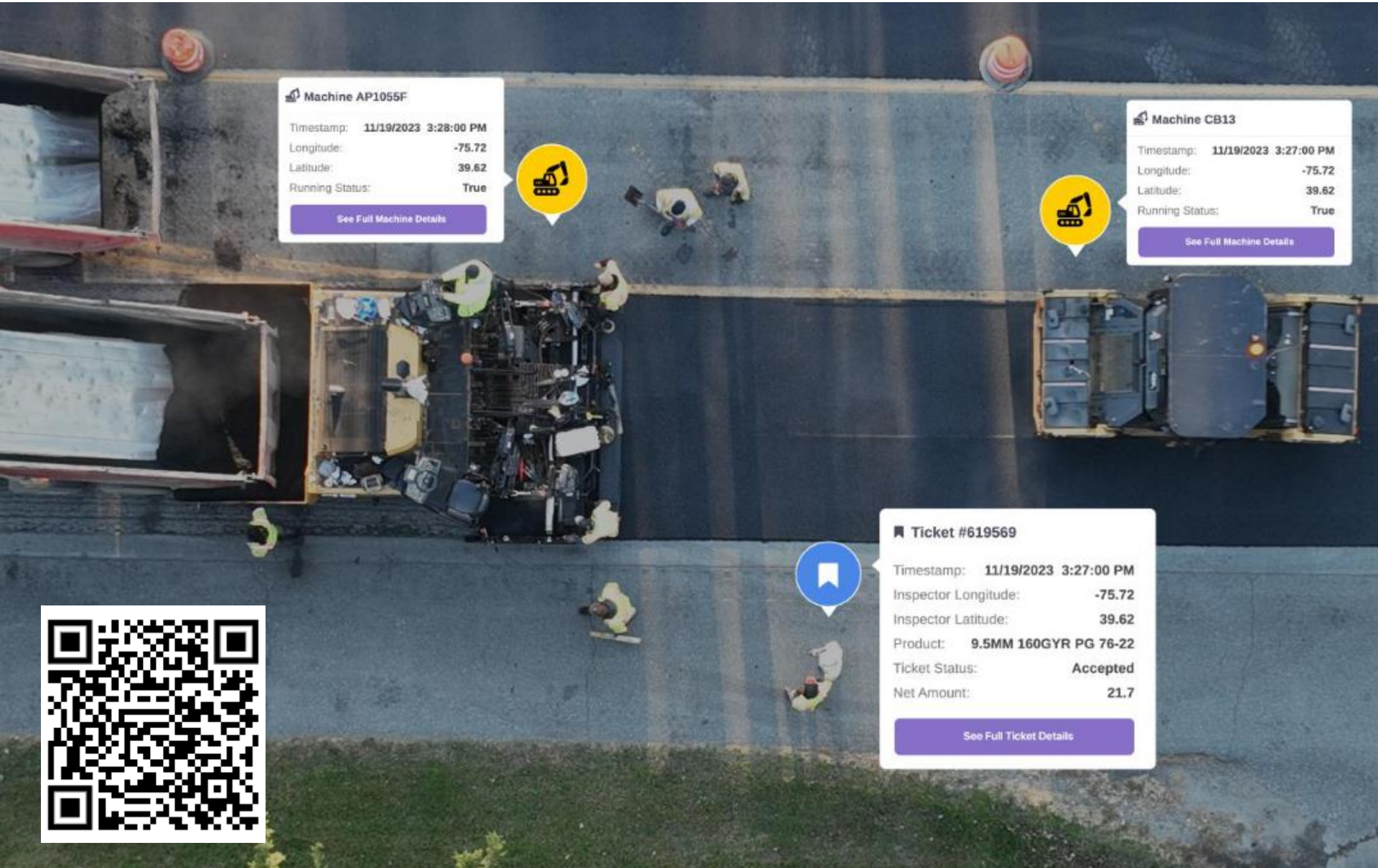


At the Job Site



Night shift job Site





Machine AP1055F

Timestamp: **11/19/2023 3:28:00 PM**
Longitude: **-75.72**
Latitude: **39.62**
Running Status: **True**

[See Full Machine Details](#)

Machine CB13

Timestamp: **11/19/2023 3:27:00 PM**
Longitude: **-75.72**
Latitude: **39.62**
Running Status: **True**

[See Full Machine Details](#)

Ticket #619569

Timestamp: **11/19/2023 3:27:00 PM**
Inspector Longitude: **-75.72**
Inspector Latitude: **39.62**
Product: **9.5MM 160GYR PG 76-22**
Ticket Status: **Accepted**
Net Amount: **21.7**

[See Full Ticket Details](#)



AASHTOware integration

Contract Daily Work Report Summary

Contract: e-Ticketing - Concrete e-ticketing demo Save ?

DWR Date: 06/05/2021 Inspector: sfarmerie-iti Sequence: 1 Status: Draft

General
Notes
Contractors On Site
Contractor Equipment
Contractor Personnel
Postings
Acceptance Records
Force Account Contractors

Q Type search criteria or press Enter Advanced Showing 1 of 1

Select Items... 0 marked for deletion 0 changed

Item ID	Item Description	Project	Category	Records	Curr Qty	Unit Price
415.0060	Concrete Pavement 6-Inch	e-ticketing dem	01	1	10,000.000	20.00000
Cont Item ...	Supplemental Description	Total Qty Po...	Total Qty Po...	Total Qty Pa...	Amount Pai...	Proj Ln Num
0001		0.000	0.000	0.000	0.00	0001

Item Posting N...	Contractor	Station/Location	Quantity Posted
1	AA07 - A & A CONCRETE & LANDSCAPING, INC. (Prime)	approach ramp	

Contractor + ▼
 A & A CONCRETE & LANDSCAPING, INC. (Prime) ▼

Quantity Posted ▼

Station From ▼

Station To ▼

Units: SY
 Agency Views: Optional
 Location ▼: approach ramp

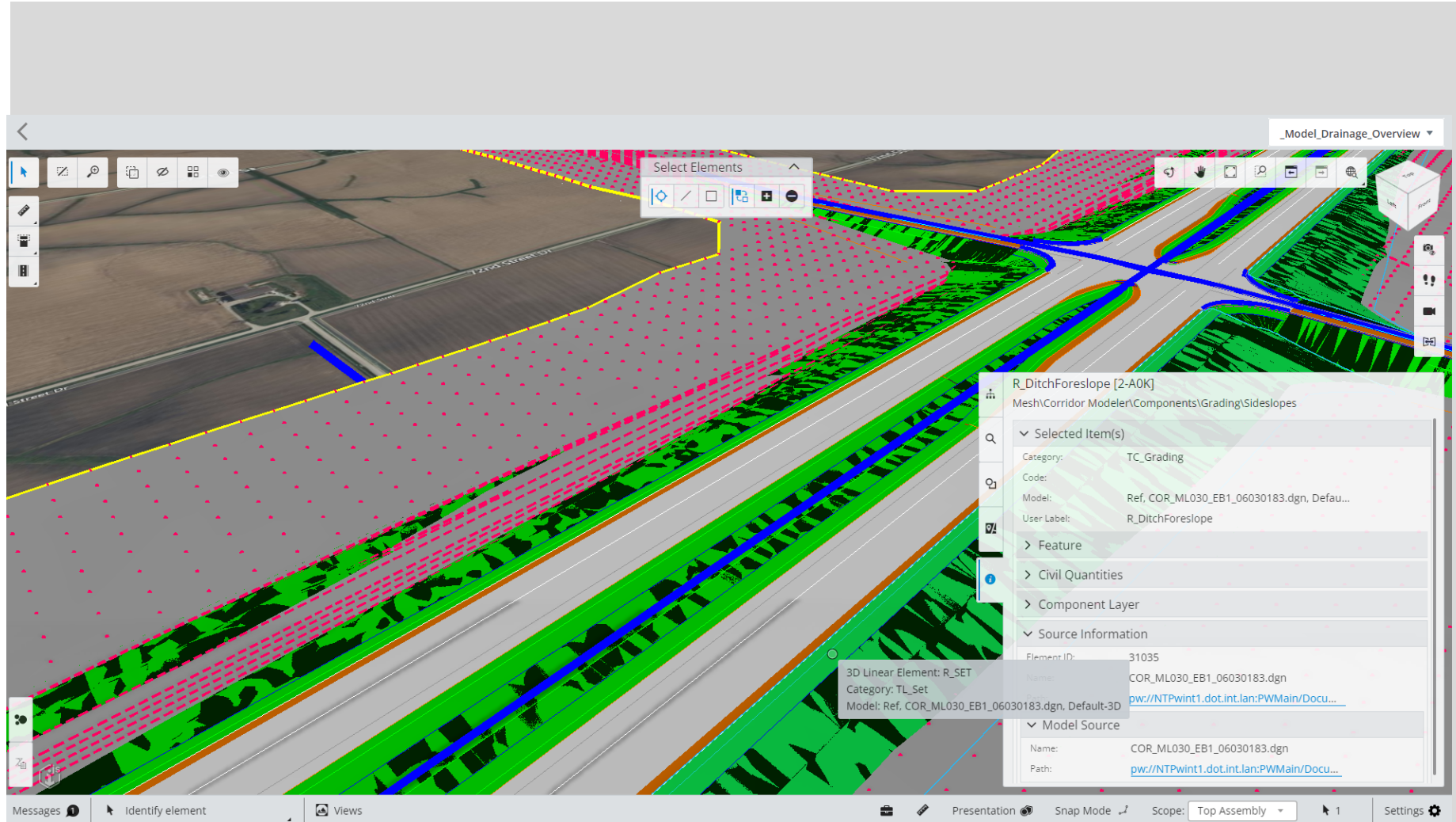
Actions ✕
 Delete
 Duplicate Row
 Insert Row
 Views
 Attachments (1)
Concrete Tickets
 Links
 Tracked Issues



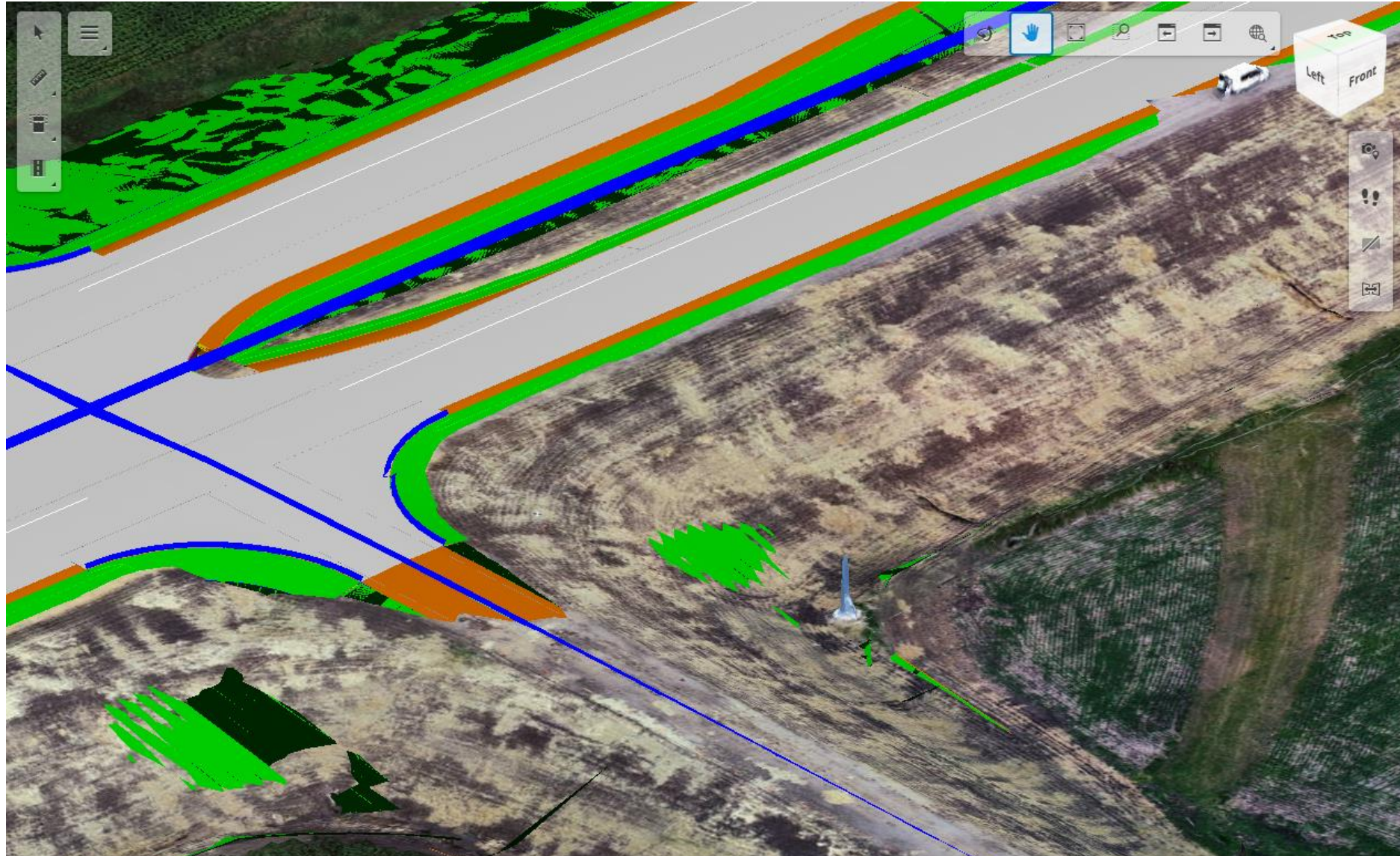
SYNCHRO™

3D model
inspection
software we
are testing.

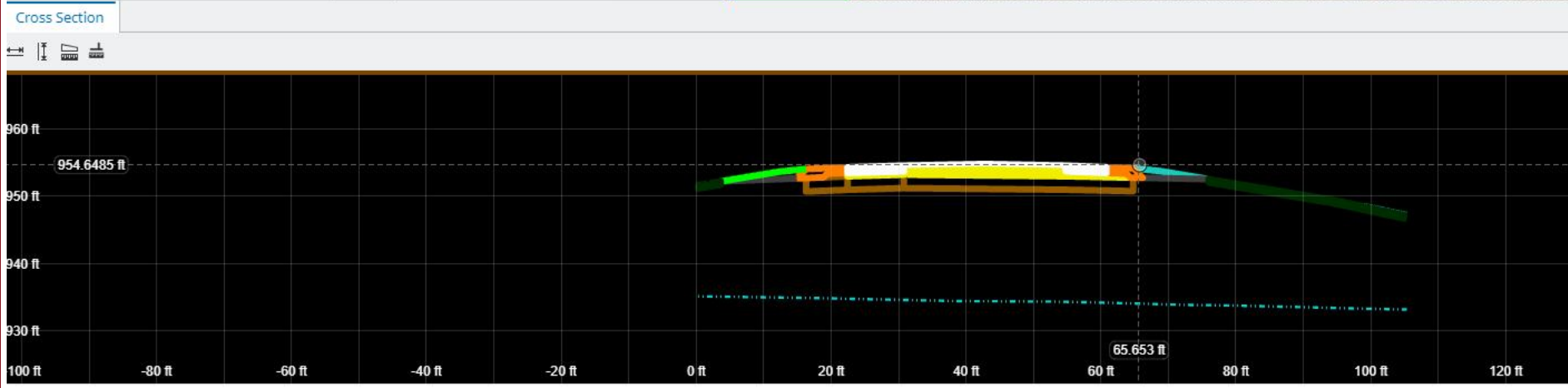
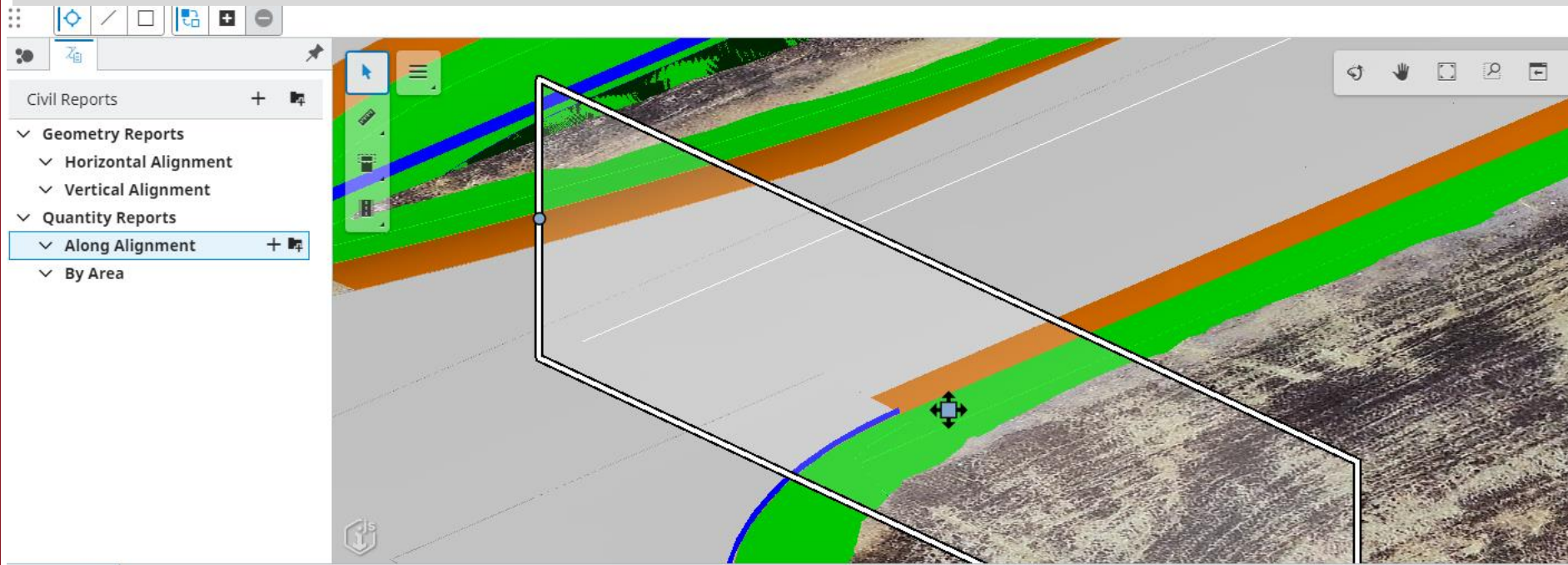
E-Construction



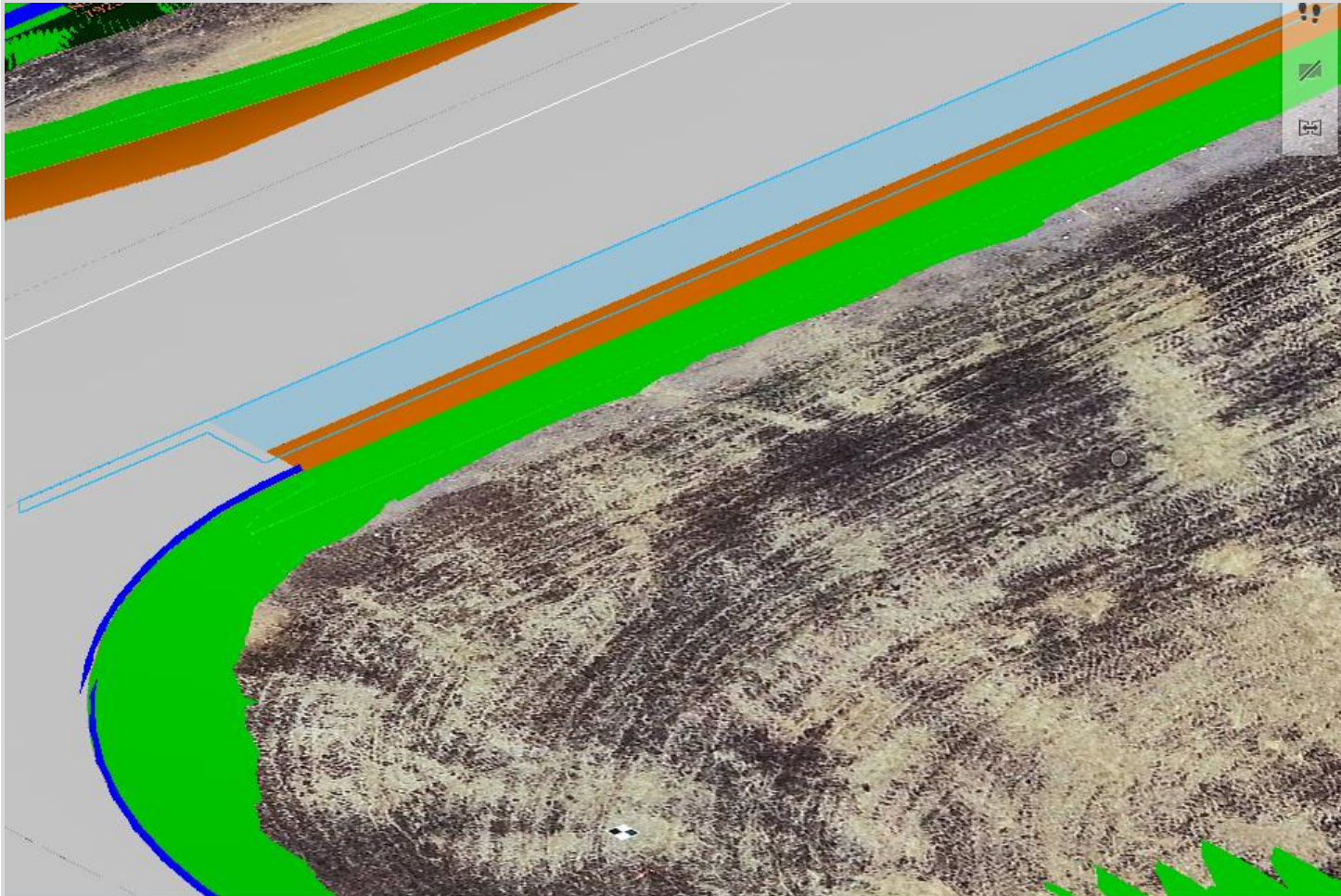
E-Construction



E-Construction



E-Construction



2023_0629-sUAS_3SM-S...

Properties

Right PCC Shoulder [2-4T1]
Mesh\Corridor Modeler\Component...

User Label
Right PCC Shoulder

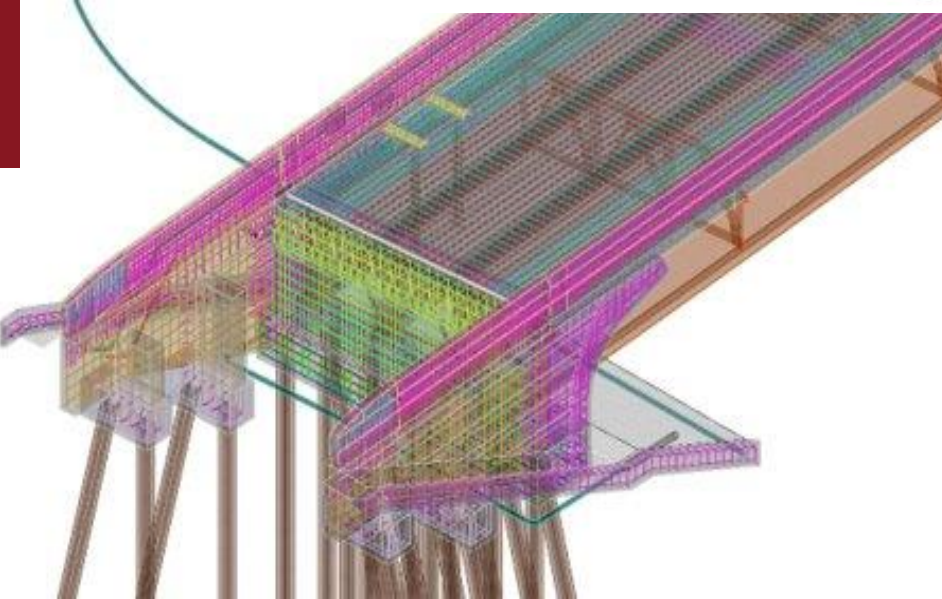
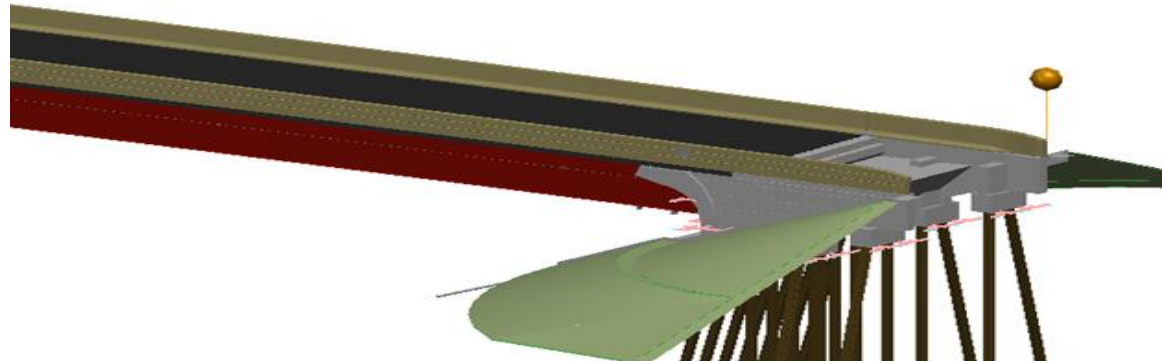
Feature

Feature Definition
Mesh\Corridor Modeler\Compon...
Feature Name
Right PCC Shoulder

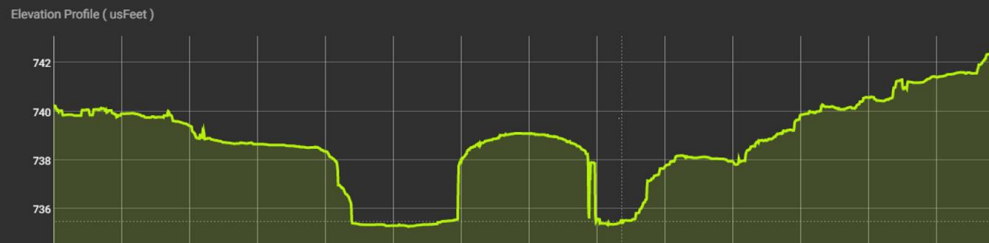
Civil Quantities

Top Sloped Area
58213.43 ft²

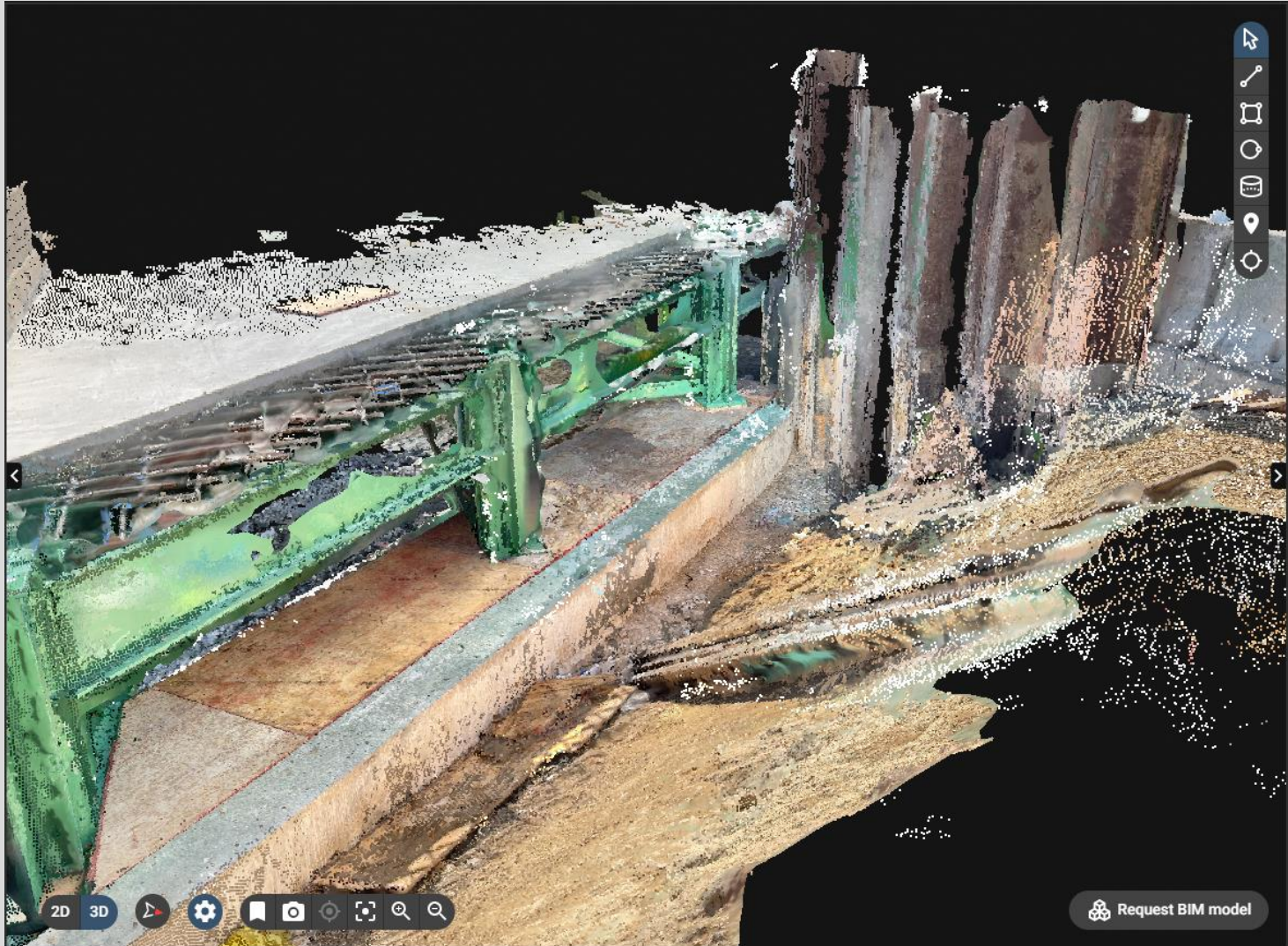
E-Construction

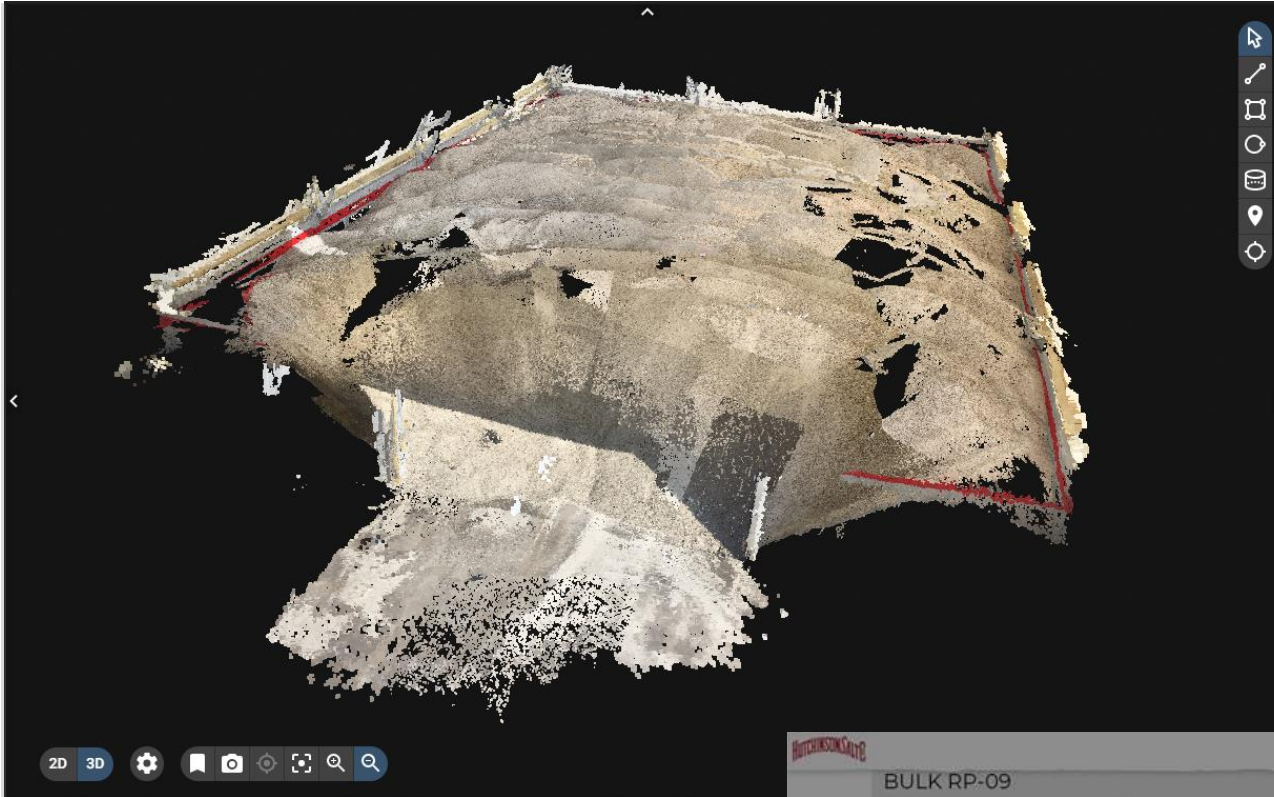


E-Construction



E-Construction





HUTCHINSON SALT

HOME COMPANY PRODUCTS MEDIA GREEN SAFETY APPLY

BULK RP-09

BULK OVERSIZE RP-09

ASTM GRADE 1 ROAD S

SOURCE

Hutchinson Salt's crystals are extrac
645 feet below the earth's surface in
mechanized. Salt is passed through
½" in diameter. It is further processe

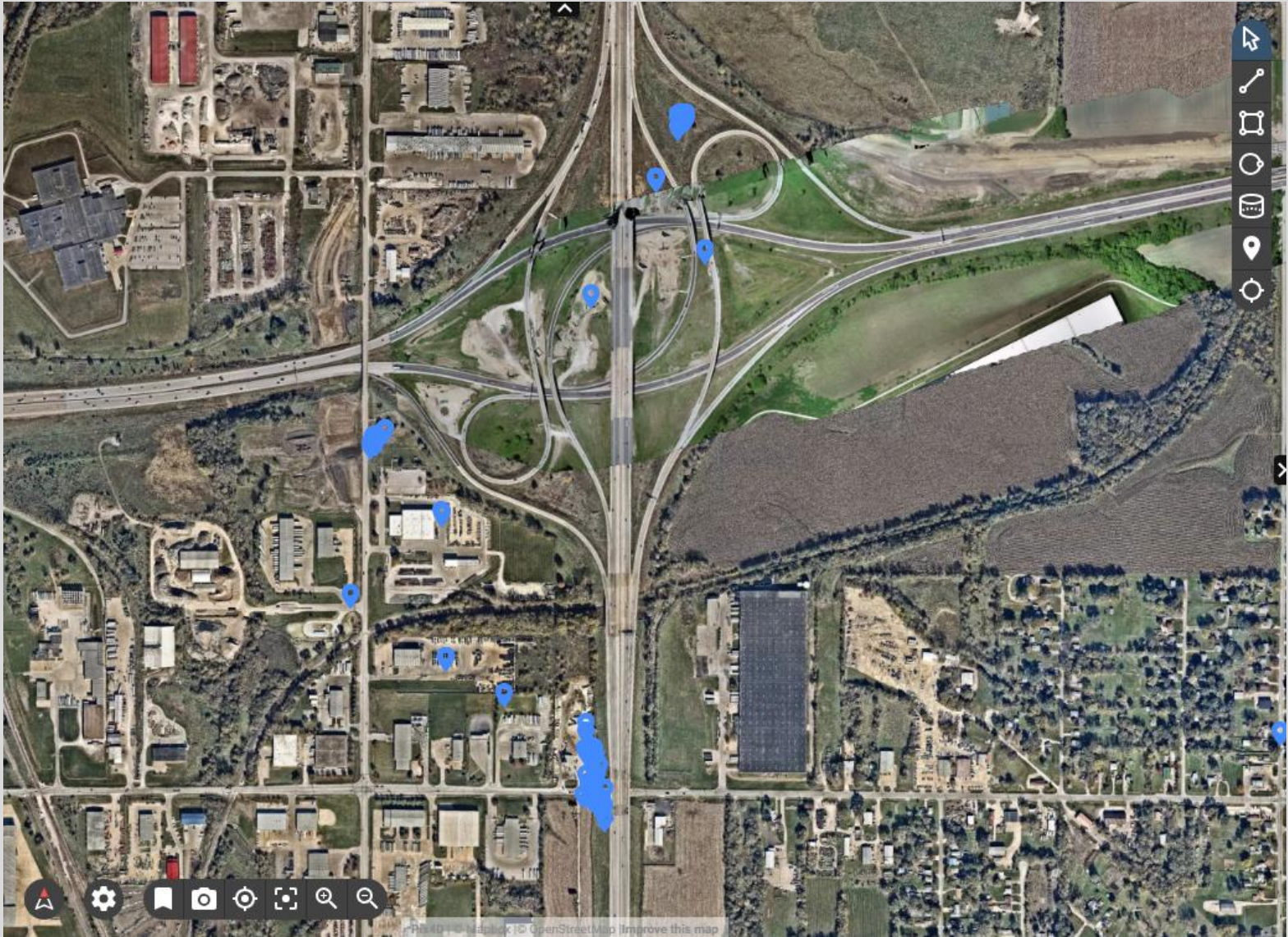
DESCRIPTION

- A careful screening process allows
- Economical and efficient chemical
- Conforms to general deicing salt specifications.

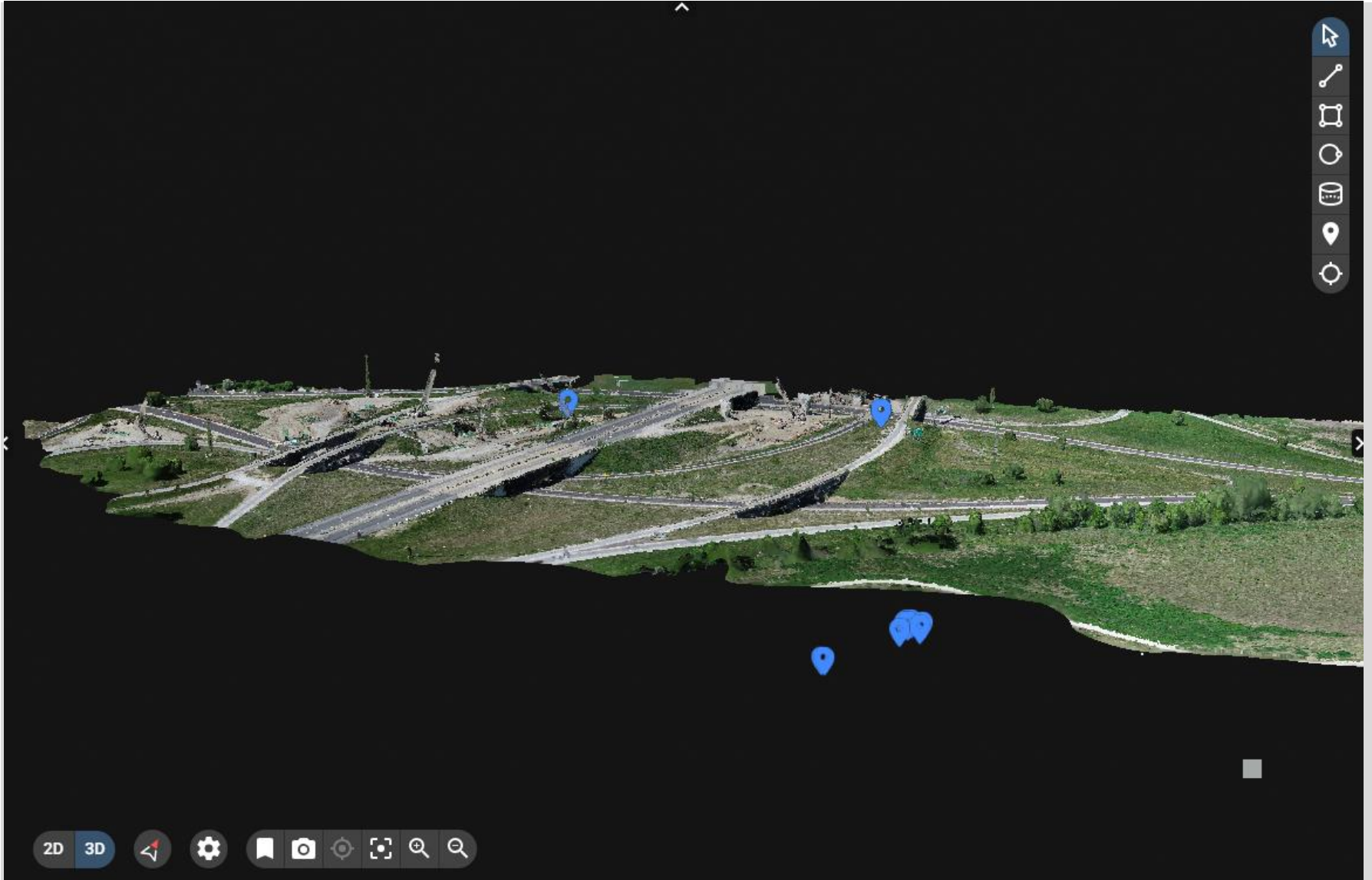
PHYSICAL PROPERTIES		
U.S. Standard	% Cumulative	
Mesh	Typical	Range
1/2"	100	100
3/8"	98	95-100
#4	47.6	20-90
#8	16.8	10-60
#30	6	0-15
PAN	0	0

Bulk Density: 71 lbs. / cu. ft.

E-Construction



E-Construction



E-Construction





E-Construction



E-Construction



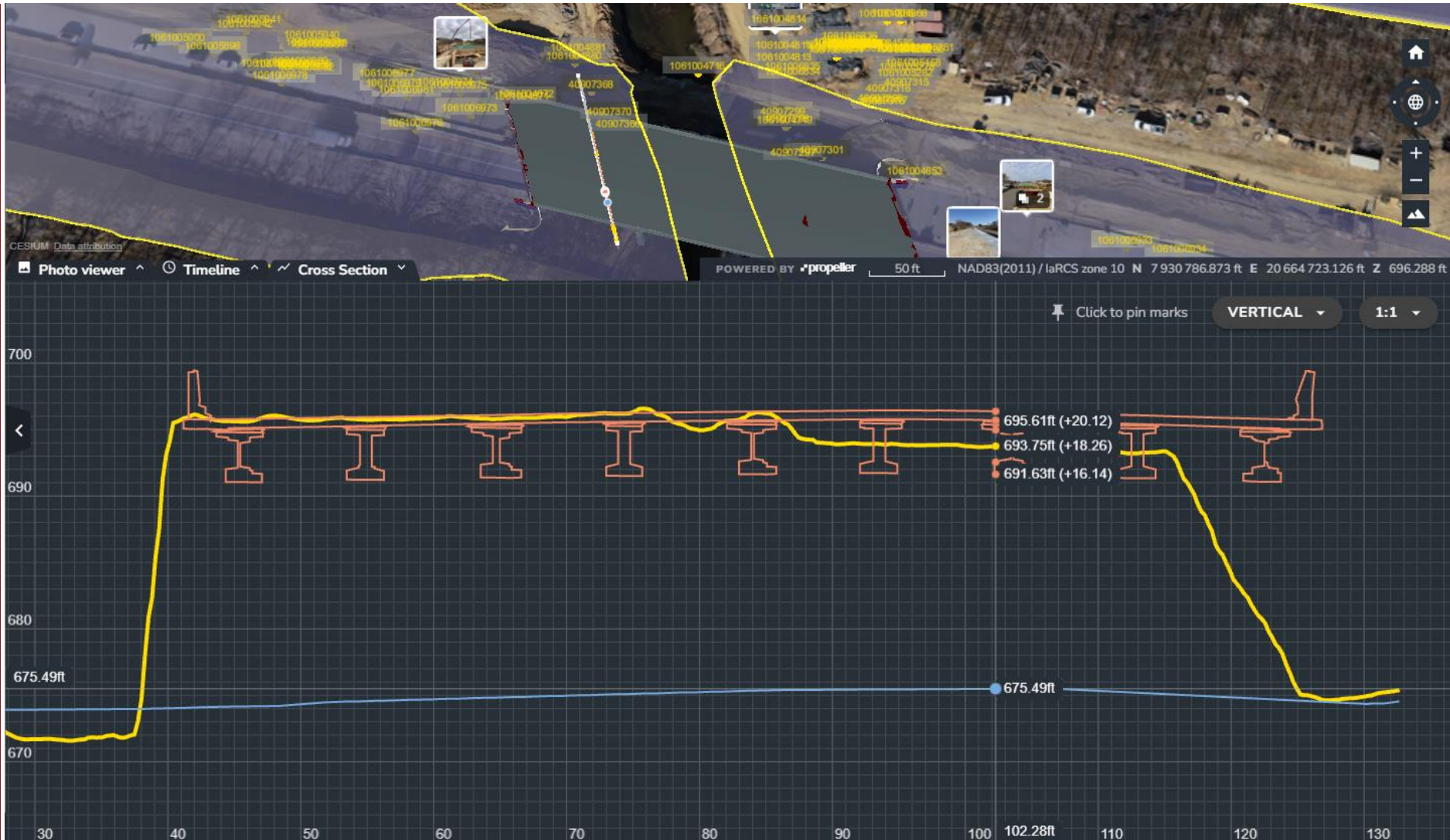
CESIUM. Data attribution

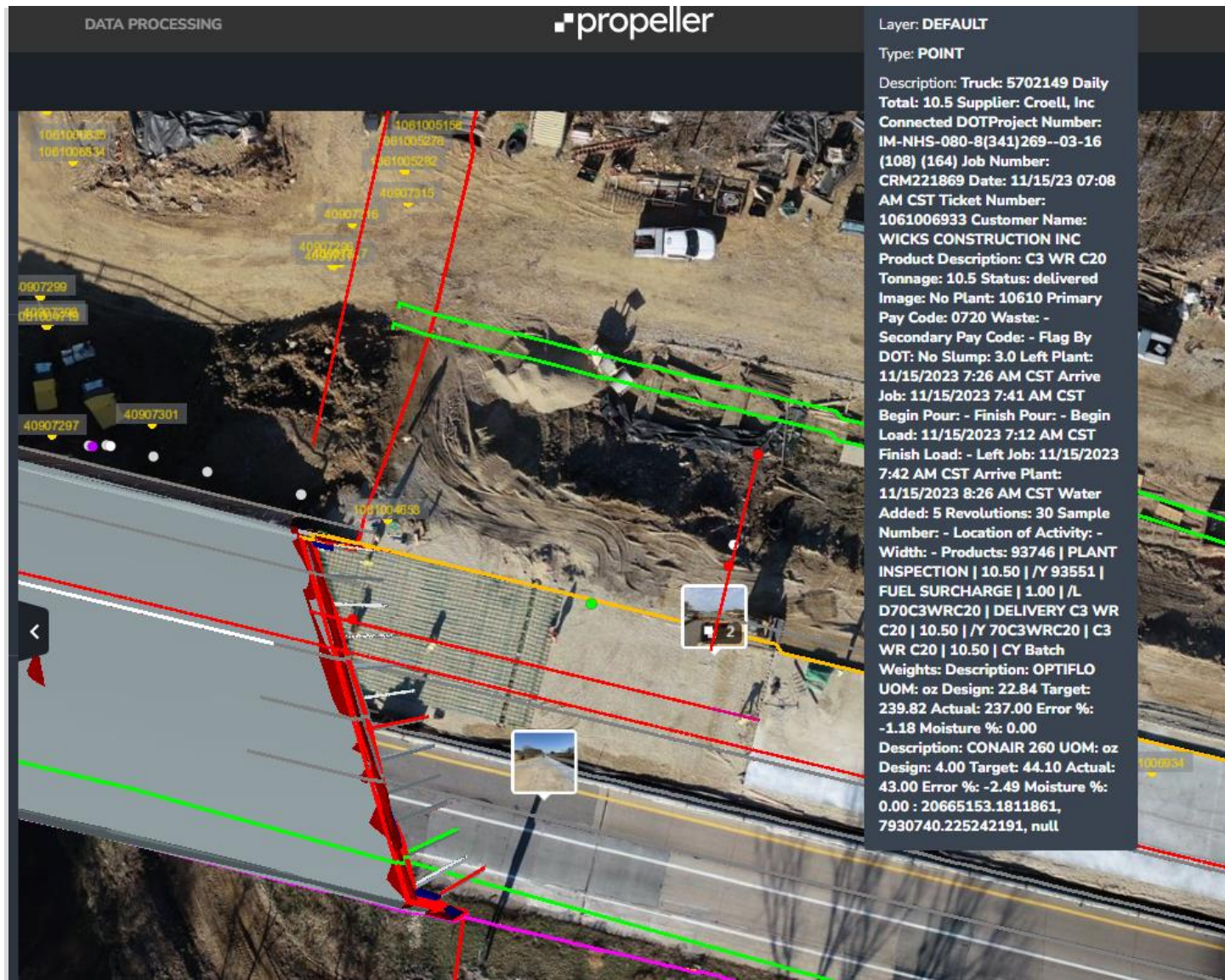
Photo viewer ^

POWERED BY propeller 10 ft NAD83(2011) / laRCS zone 10 N 7930 6



E-Construction





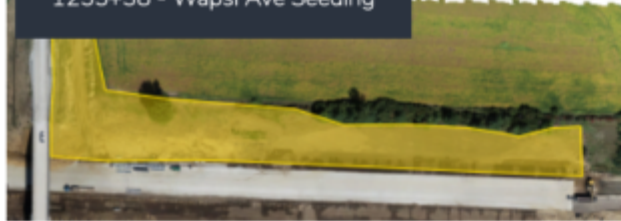
12/12/23, 6:33 PM

52-0807-174

Propeller Measurement report - 52-0807-174 - 14 Sep 2023



1255+38 - Wapsi Ave Seeding



1255+38 - Wapsi Ave Seeding

[View in Propeller](#)

<i>Map reference / legend</i>	1255+38 - Wapsi Ave Seeding
<i>Created date</i>	Oct 12, 2023
<i>Created by</i>	Andrew Lloyd
<i>Surface Area</i>	133 797 ft ²
<i>Horizontal Area</i>	128 687 ft ²
<i>Description</i>	Measured by CDW 133,797/4356 = 3.07 Acres Item 0650 Seed and Mulch Seeded 10-15-23 1248 - 1255+50 LT Side Including East of Wapsi Ave



3D model
inspection
software we are
investigating.

 E-Construction

<https://youtu.be/8TER9NOIbDY>

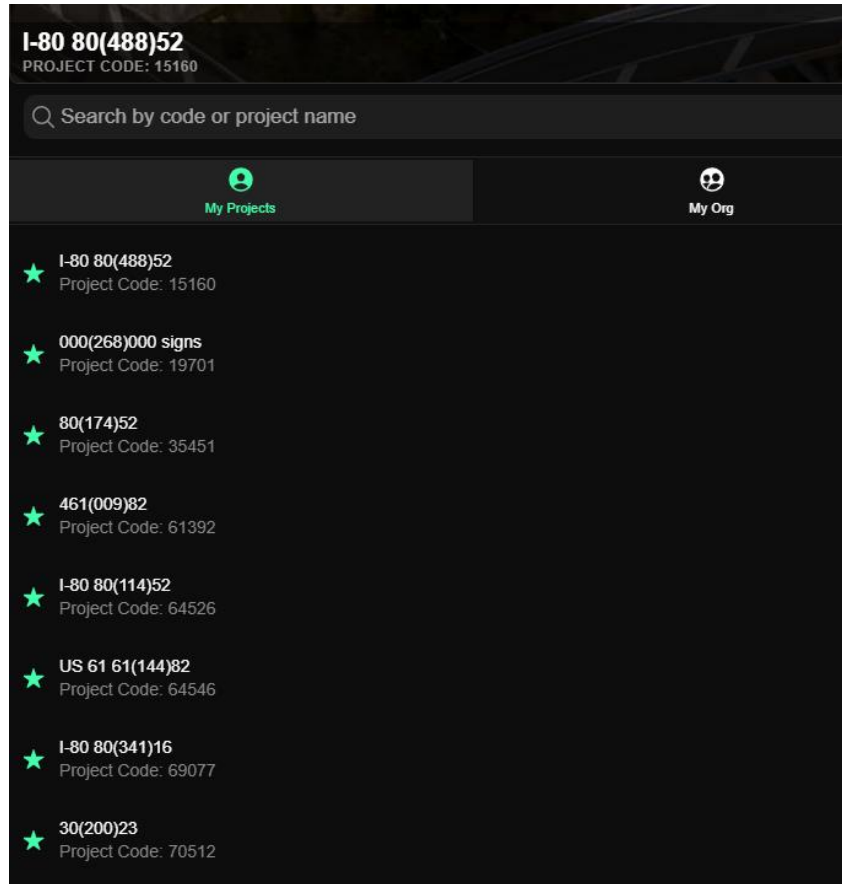


<https://youtu.be/nfUdmMWwpZI>

OnStation



OnStation



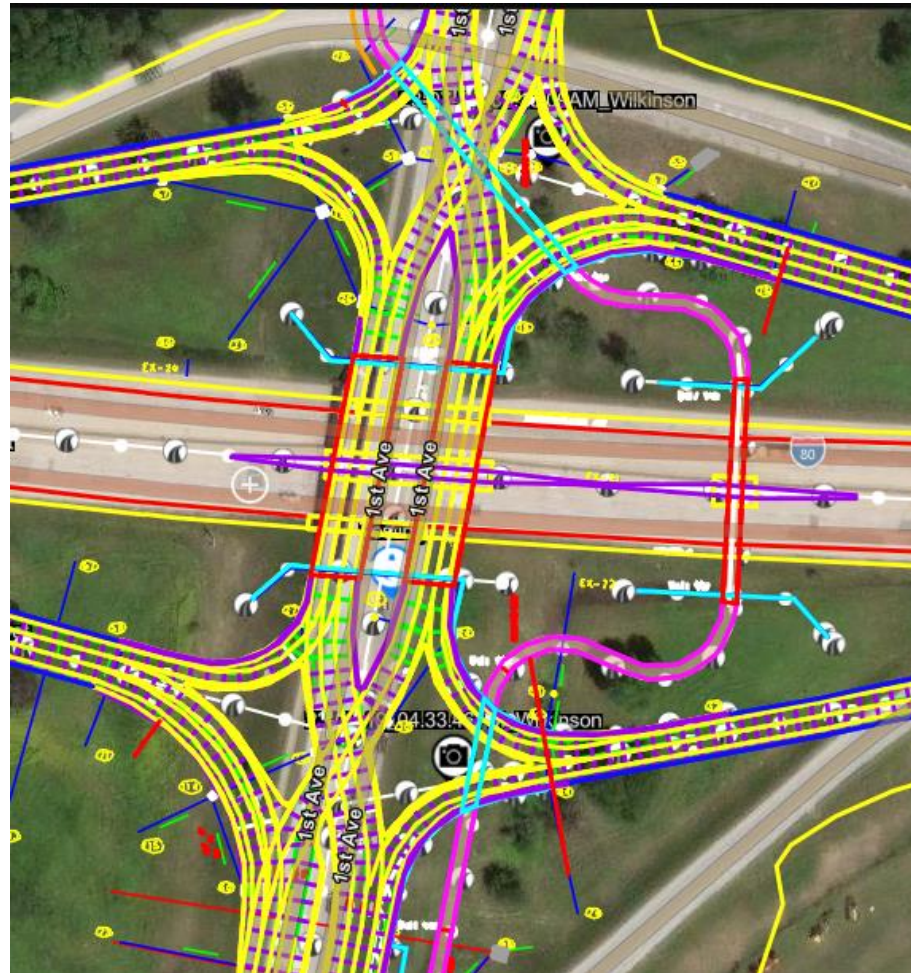
The screenshot displays the OnStation mobile application interface. At the top, the current project is identified as **I-80 80(488)52** with a **PROJECT CODE: 15160**. Below this is a search bar with the placeholder text "Search by code or project name". The interface features two main navigation tabs: **My Projects** (active, indicated by a green icon) and **My Org** (inactive, indicated by a white icon). The **My Projects** tab displays a list of project entries, each marked with a green star icon and including the project name and code:

- ★ **I-80 80(488)52**
Project Code: 15160
- ★ **000(268)000 signs**
Project Code: 19701
- ★ **80(174)52**
Project Code: 35451
- ★ **461(009)82**
Project Code: 61392
- ★ **I-80 80(114)52**
Project Code: 64526
- ★ **US 61 61(144)82**
Project Code: 64546
- ★ **I-80 80(341)16**
Project Code: 69077
- ★ **30(200)23**
Project Code: 70512

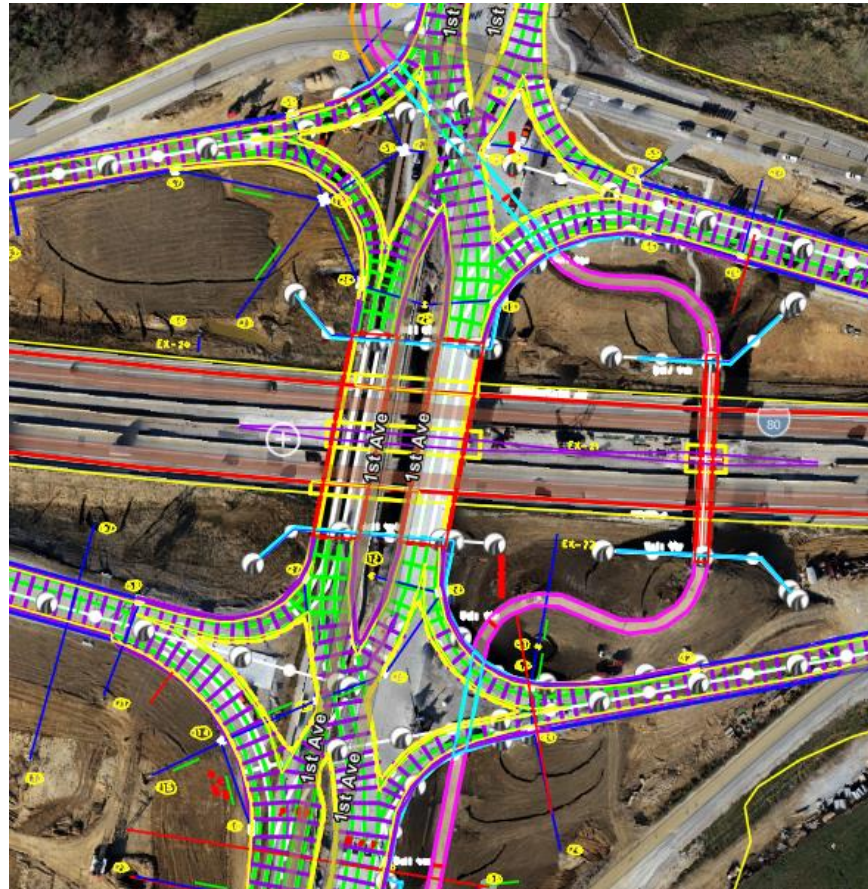
OnStation



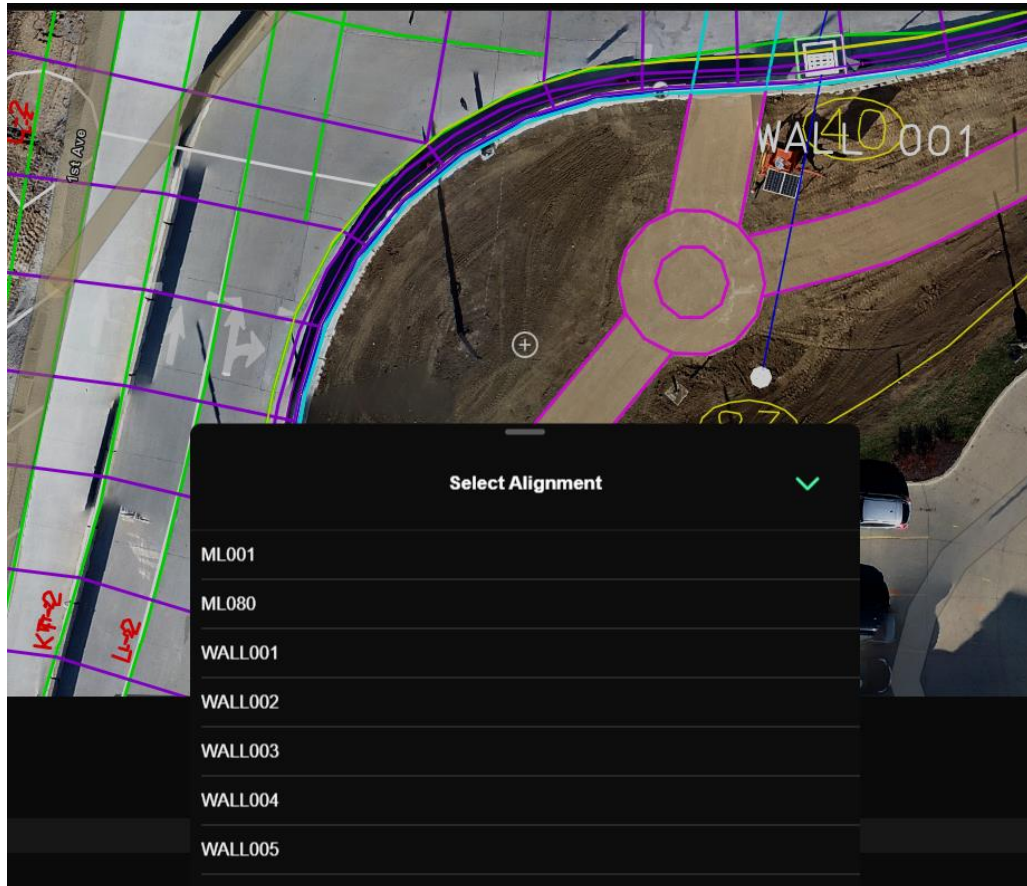
OnStation



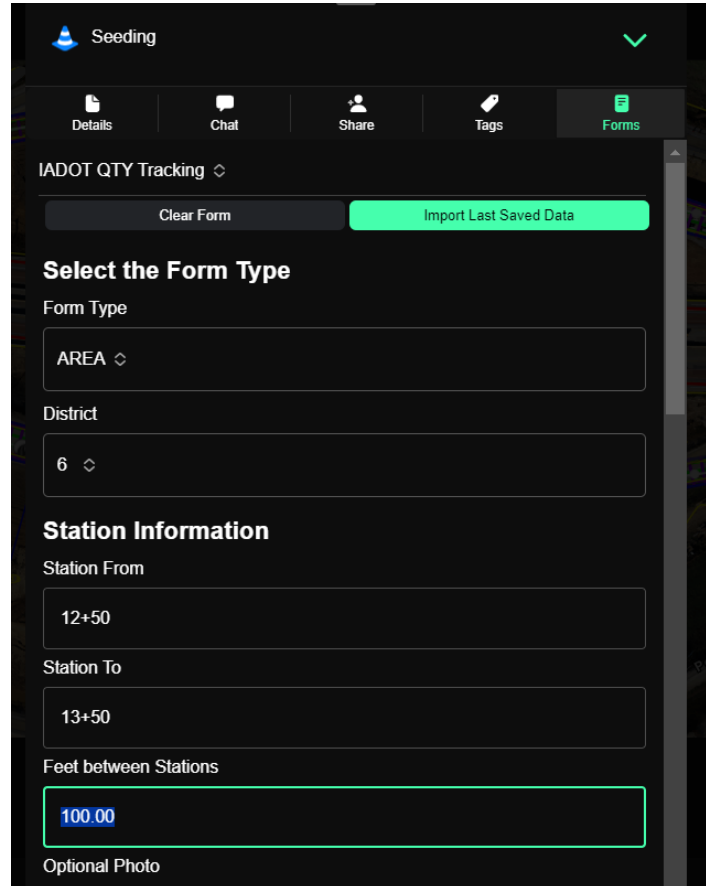
OnStation



OnStation



OnStation



The screenshot shows the OnStation mobile application interface for a "Seeding" form. The top navigation bar includes a home icon, the title "Seeding", and a checkmark icon. Below the navigation bar is a menu with icons for "Details", "Chat", "Share", "Tags", and "Forms". The main content area is titled "IADOT QTY Tracking" and contains two buttons: "Clear Form" and "Import Last Saved Data". The form is divided into sections: "Select the Form Type" with a "Form Type" dropdown set to "AREA" and a "District" dropdown set to "6"; "Station Information" with "Station From" (12+50), "Station To" (13+50), and "Feet between Stations" (100.00); and an "Optional Photo" section at the bottom.

Seeding

Details Chat Share Tags Forms

IADOT QTY Tracking

Clear Form Import Last Saved Data

Select the Form Type

Form Type

AREA

District

6

Station Information

Station From

12+50

Station To

13+50

Feet between Stations

100.00

Optional Photo

OnStation



Import Flags to Project



Export Project to GeoJSON



Export Project to KML



Export Project to CSV



Export Project to ESRI GeoJSON

GIS Utilities Developmental Specification

DS-23XXX
(New)



DEVELOPMENTAL SPECIFICATIONS
FOR
GEOSPATIAL MAPPING OF SUB-SURFACE AND UNDERGROUND UTILITIES

Effective Date
November 21, 2023

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

23XXX.01 DESCRIPTION.

The purpose of this specification is to capture as-constructed or as-built geospatial information for subsurface underground utilities including highway lighting and agency communication lines. Asset information shall be recorded and submitted as directed in this developmental specification. It is the intent of the Contracting Authority to capture three dimensional (3D) as-built data within Contracting Authority right-of-way in accordance with the most current version of ASCE 75. As such, ASCE 75 shall serve as a guiding reference for this specification. The DOT has condensed its specific language into this specification for brevity. Clarifications or questions may be answered within Standard ASCE/UESI/CI 75-22. All tables are from *Standard Guideline for Recording and Exchanging Utility Infrastructure Data*, ASCE/UESI/CI 75-22, with permission from ASCE.

23XXX.02 MATERIALS.

GPS Equipment to record geospatial location to 0.1 foot and utilize project Geoid and Iowa Regional Coordinate system or transform to those coordinates. See <https://iowadot.gov/iarcs/Home> for coordinate system.



Draft Connected Equipment SP

SP-xxxxxx
(New)



**SPECIAL PROVISIONS
FOR
CONNECTED EQUIPMENT API INTEGRATION FOR ACTIVE WORK ZONE MONITORING**

County TBD

Effective Date TBD

**THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING
MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL
PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.**

XXXX.01 DESCRIPTION.

- A. The intention of this specification is to provide a feed of active equipment in a work zone for the purposes of connecting to the Iowa DOT WZDx and Traffic Management Center. This work involves integrating construction equipment, including but not limited to CAT, John Deere, GOMACO, Wirtgen, and similar machines, with a real-time Application Programming Interface (API) that connects directly to the Iowa DOT e-Ticketing portal. This will facilitate the real-time reporting on the following equipment statuses:

1. Equipment ID
2. Engine state
3. Latitude/Longitude
4. Fuel Percentage
5. Cumulative Engine Hours
6. Cumulative Fuel Consumption
7. Heading
8. Speed
9. Created timestamp.
10. Updated timestamp
11. Vibrations

- B. The equipment should be capable of connecting to a cloud service using cellular connectivity to ensure real-time updates and accurate monitoring every 5 minutes.



AID Grant

Applied in 2021 – Received notice during 2023 ADCMS grant prep

Key objectives for \$1.2 million funding include:

- Detailed digital delivery implementation plan
- Improve asset management by integration of information beyond digital as-builts and geospatial information
- Pilot use cases for digital delivery

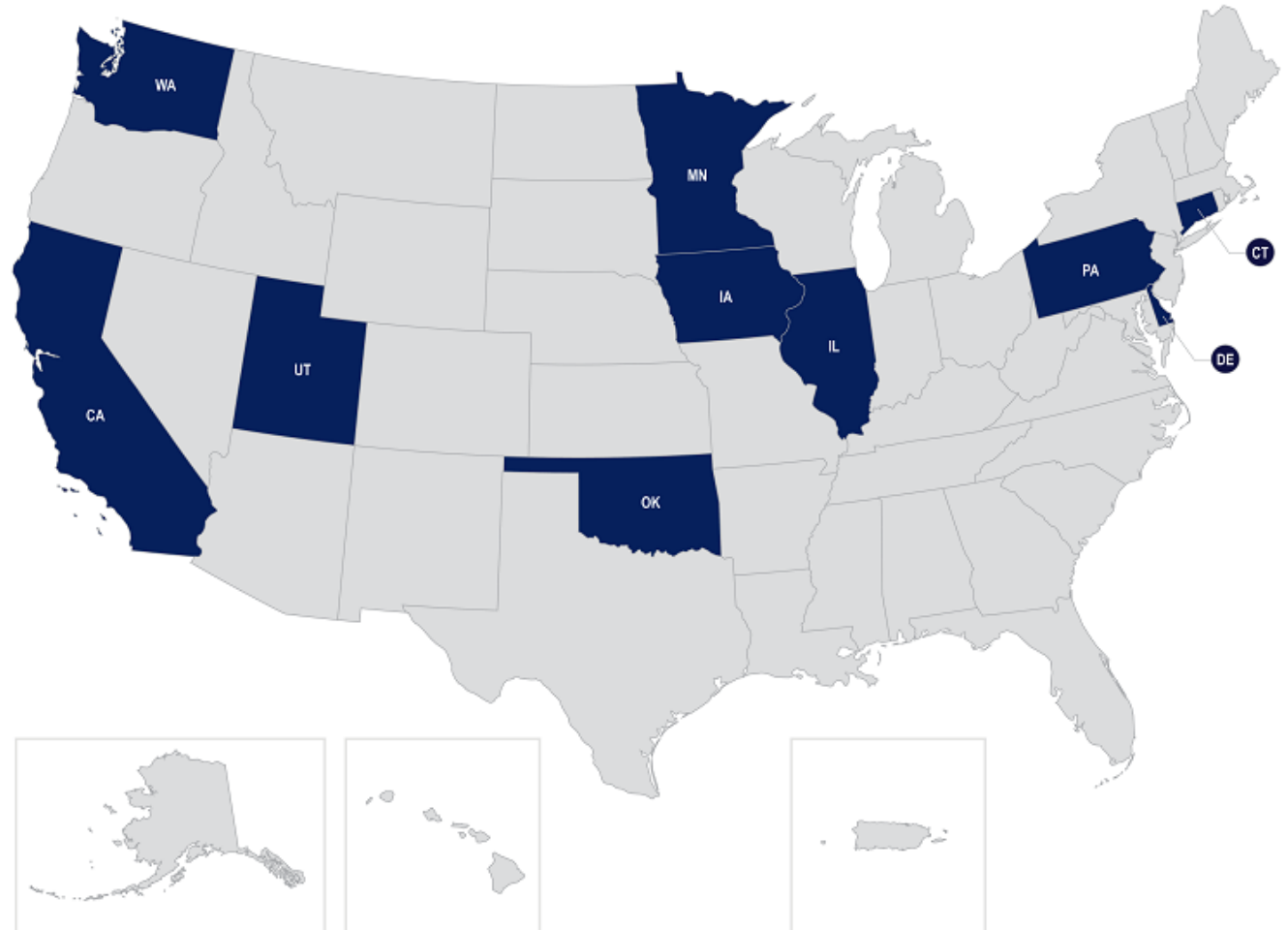
ADCMS Grant

Applied for the FY 2022/2023 grant

- Business Data Management Solutions
- CAD to GIS Modeling Strategy – Design to Construction to Operations to Asset Management to Design (1-3 assets)
- Project Design Delivery Solutions – Focus on open-source solutions for bridge design and deliverables



FY22-23 Advanced Digital Construction Management System Grant Recipients



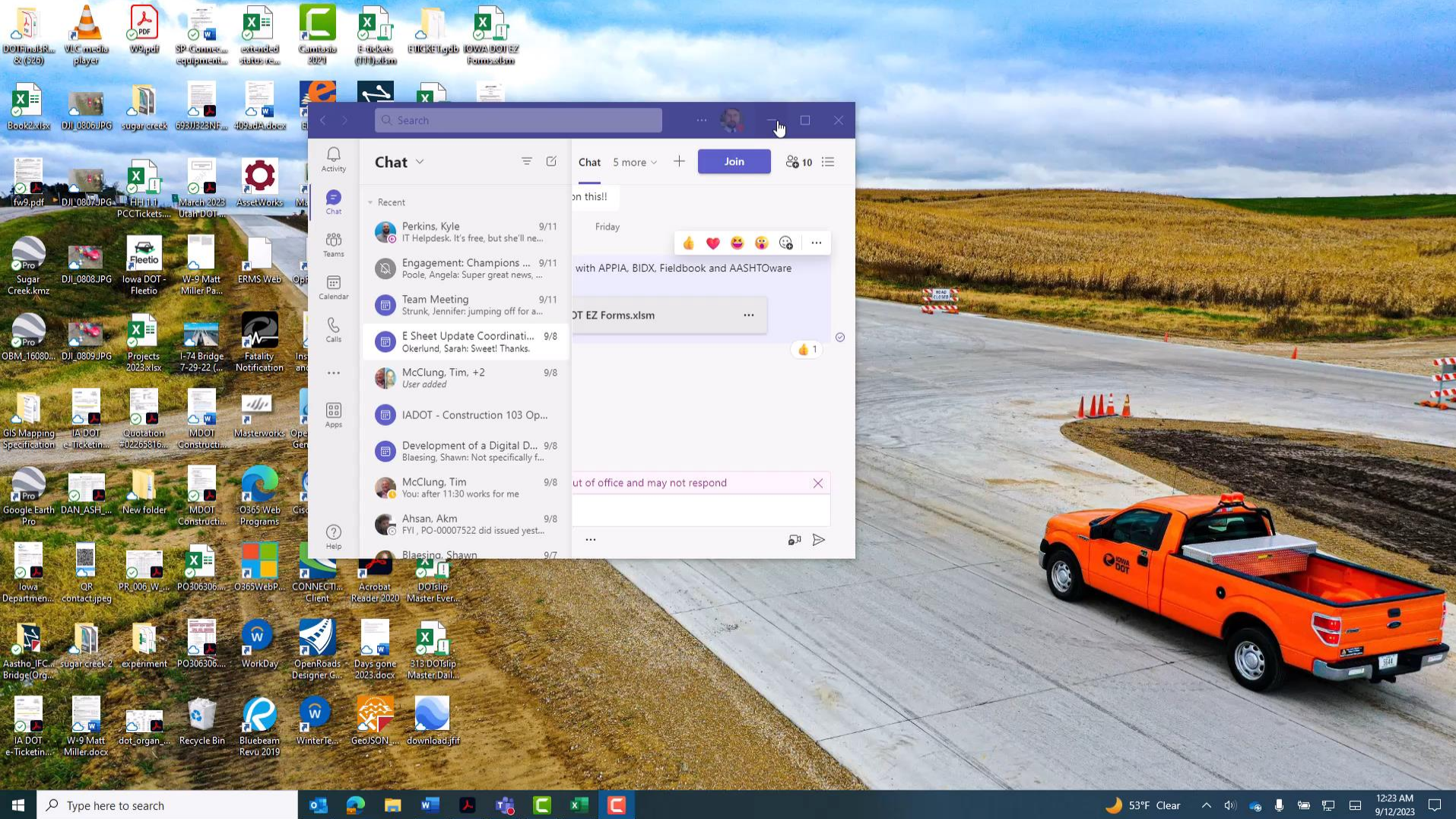


THANK YOU FOR YOUR TIME AND ATTENTION



Matthew Miller
E-construction Program
Administrator

E-Construction



Chat 5 more + Join 10

Recent

- Perkins, Kyle 9/11
IT Helpdesk. It's free, but she'll ne...
- Engagement: Champions ... 9/11
Poole, Angela: Super great news, ...
- Team Meeting 9/11
Strunk, Jennifer: jumping off for a...
- E Sheet Update Coordinati... 9/8
Okerlund, Sarah: Sweet! Thanks.
- McClung, Tim, +2 9/8
User added
- IADOT - Construction 103 Op... 9/8
- Development of a Digital D... 9/8
Blaesing, Shawn: Not specifically f...
- McClung, Tim 9/8
You: after 11:30 works for me
- Ahsan, Akm 9/8
FYI, PO-00007522 did issued yest...
- Blaesing, Shawn 9/7

on this!

Friday

with APPIA, BIDX, Fieldbook and AASHTOWare

IOWA DOT EZ Forms.xlsx

out of office and may not respond



