



# **BUILDING FOR SUCCESS**

*Roll Plans in Practice: Streamlining Plan Delivery for Design and Construction*

Presented by Illinois Tollway General Engineering Consultant Vaughn Whitaker, BIM Lead and Raj Rajasekhar, Roadway Design Manager

February 23, 2026



**Please remain  
muted for the  
duration of the  
webinar**

**Questions can be  
submitted via the  
chat box and will be  
answered during the  
Q&A portion**



# HOUSEKEEPING RULES

Presented on February 23, 2026

# WELCOME AND INTRODUCTIONS

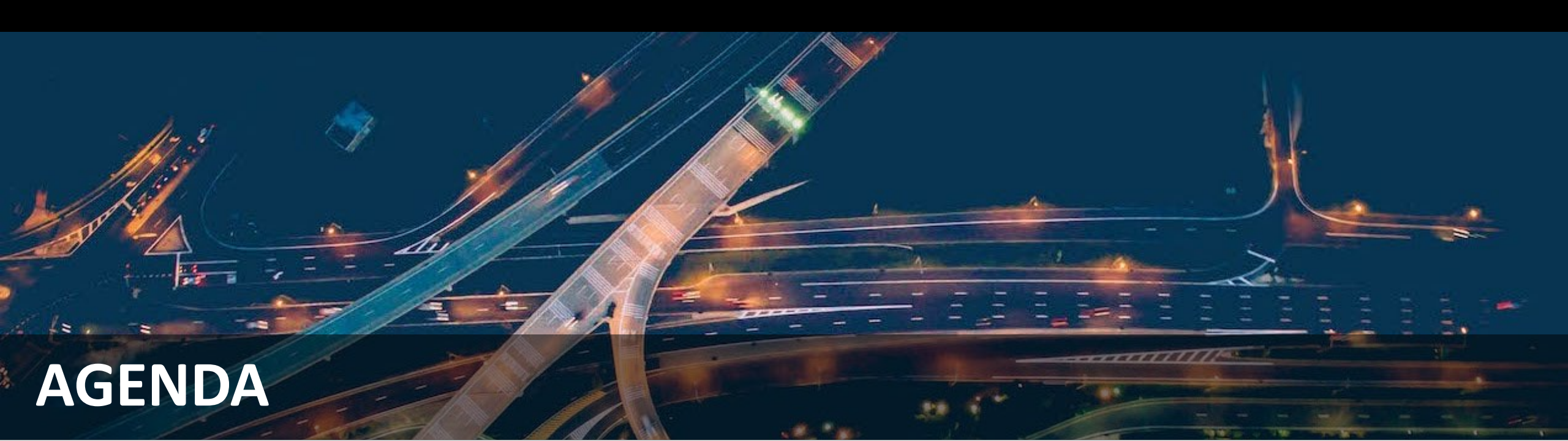
*Roll Plans in Practice: Streamlining Plan Delivery for  
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**Presented by: Illinois Tollway General Engineering Consultant**

**Vaughn Whitaker, BIM Lead**

**Raj Rajasekhar, Roadway Design Manager**

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# **AGENDA**

**Digital Delivery – Roll Plans**

**Types of Roll Plans – Static and Dynamic**

**Steps for Creating a Roll Plan**

**Practical Use of Roll Plans**

**Limitations and Challenges**

**Sample Roll Plans Illustration – Bluebeam**

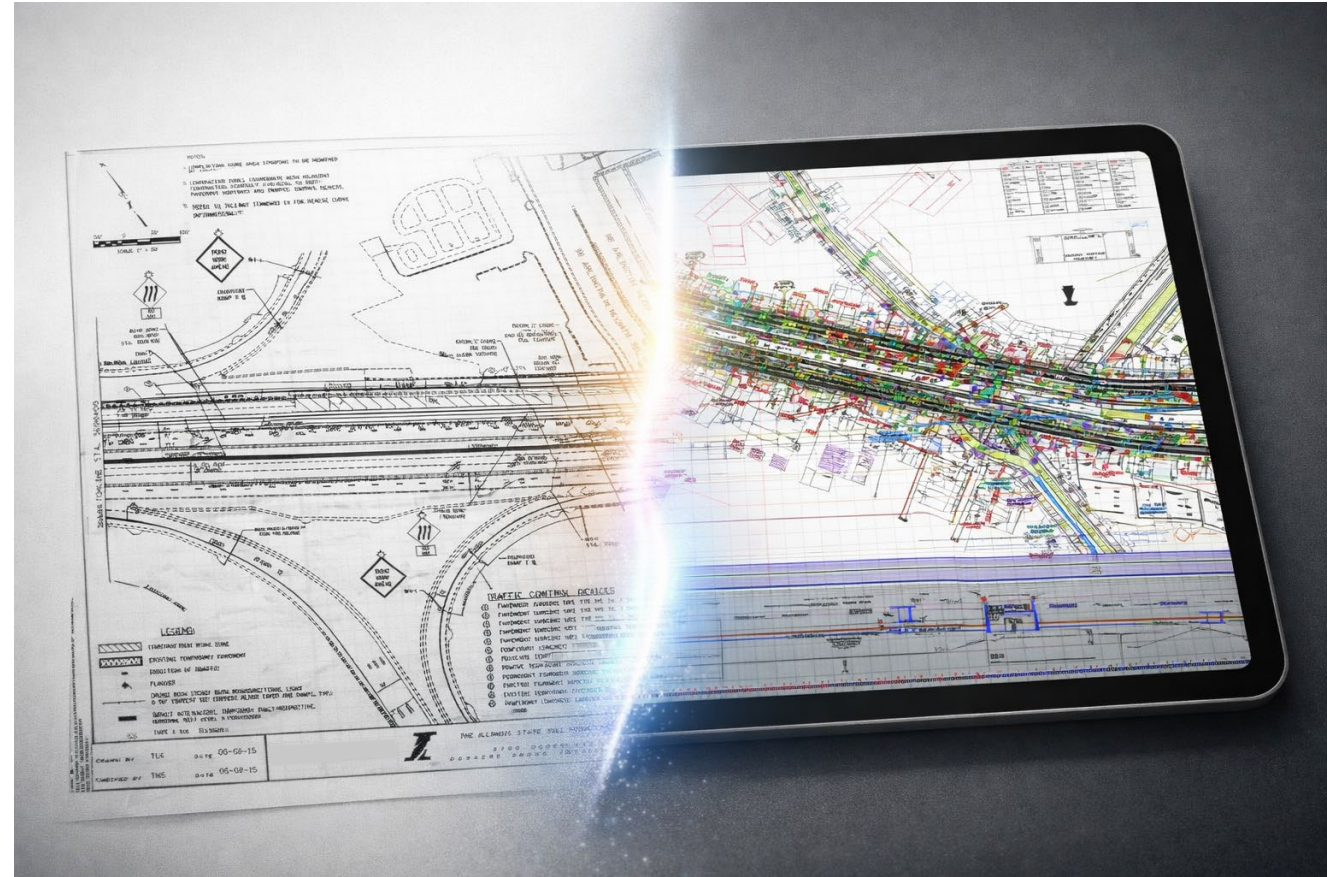
# DIGITAL DELIVERY – ROLL PLANS

## Why Roll Plans?

- Translating design into a field-ready format to improve digital delivery

## Targeted Approach

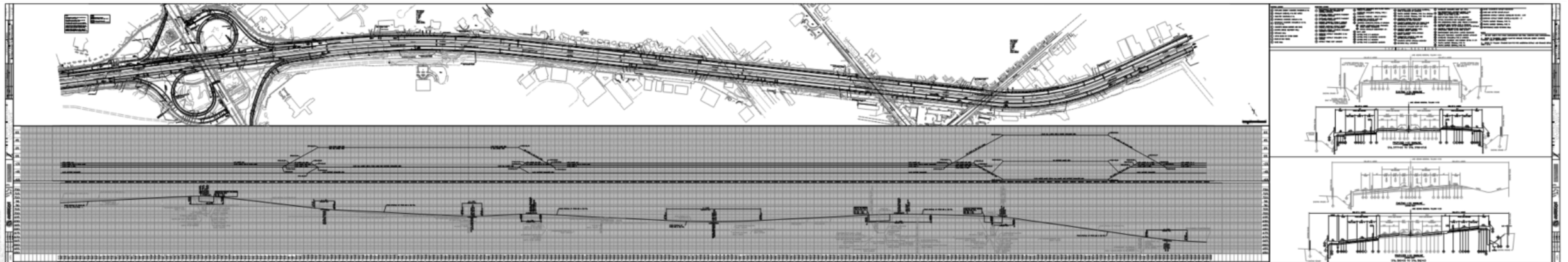
- Design efficiency
- Model confidence
- Production improvement



# TYPES OF ROLL PLANS – STATIC AND DYNAMIC

## Static Roll Plan

- One discipline per roll plan
  - Roadway, drainage, signage, etc. as a separate roll plan
- Not layered (flattened) PDFs
- Gray scale (proposed black, existing gray)
- Contractual requirement (replaces 22" x 34" sheets)



# TYPES OF ROLL PLANS – STATIC AND DYNAMIC

## Dynamic Roll Plan

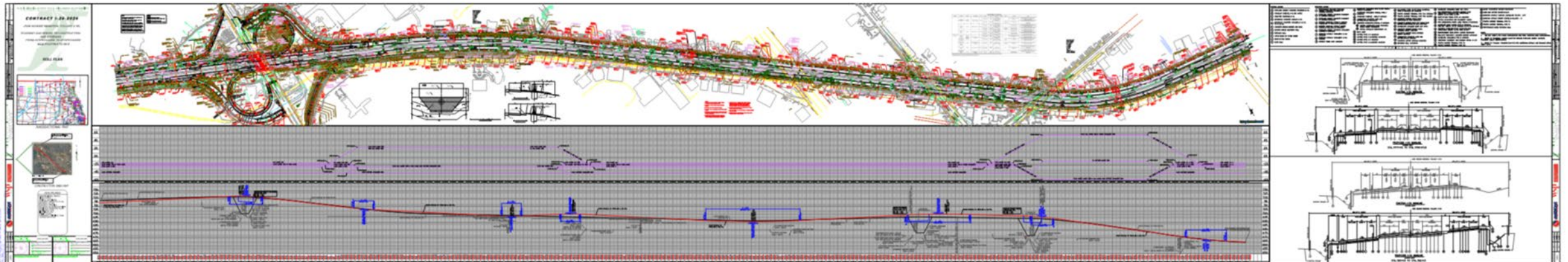
- Multi discipline in one roll plan
  - Roadway, drainage, signage, etc.
- Layered PDF (able to toggle layers)
- Colored (proposed color, existing gray)
- FYI – Discuss with Tollway PM on submittal requirements

### Feature Classification

Static roll plans shall be greyscale.

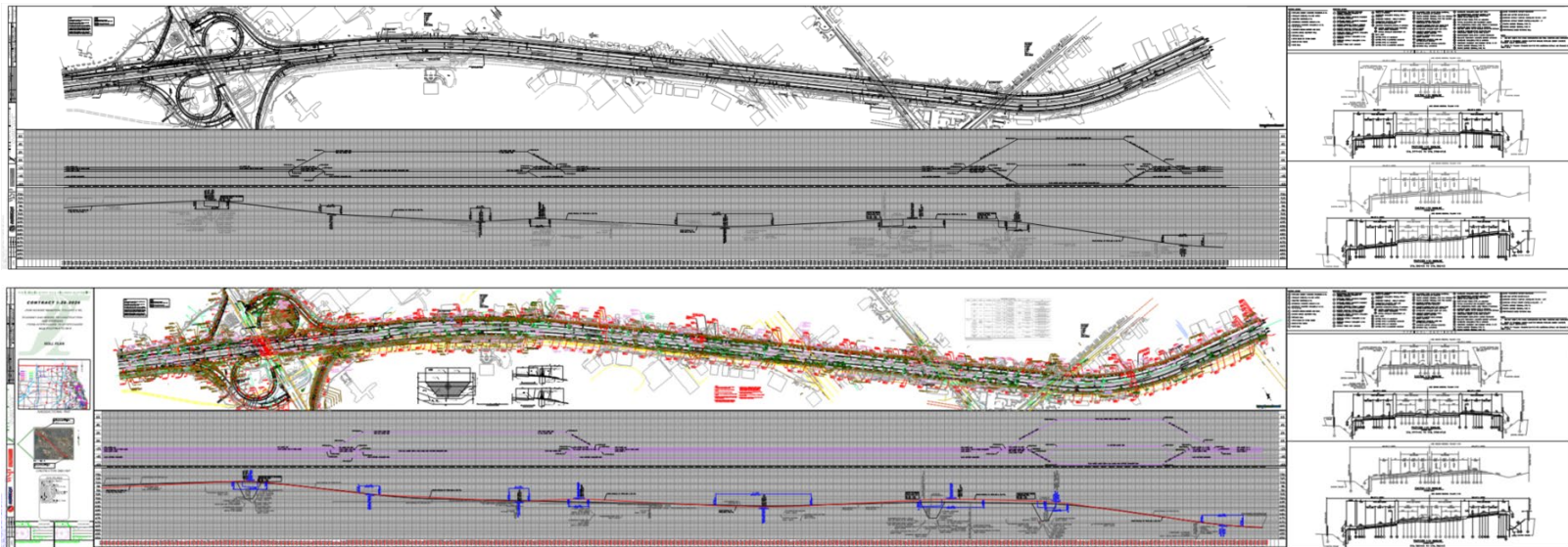
Dynamic roll plans shall be colored. Feature color coding for dynamic roll plans should adhere to the guidelines provided below:

Feature Name	Color	Index #
Ex. Topo	Light Gray	241
Ex. Topo Labels	Light Gray	241
Pr. Roadway Plan	Black	35
Pr. Roadway Plan Labels	Black	35
Pr. Roadway Plan Legend	Black	35
Pr. Signage	Magenta	49
Pr. Signage Labels	Magenta	49



# TYPES OF ROLL PLANS – STATIC AND DYNAMIC

Static	Dynamic
One discipline	Multi discipline
Not layered PDF (flattened)	Layered PDF (able to toggle layers)
Gray scale (proposed black, existing gray)	Colored (proposed color, existing gray)
Smaller file size (2 mb)	Larger file size (15 mb w/o raster images)
Contractual (replaces 22" x 34" sheets)	FYI (Discuss with Tollway Project Manager)



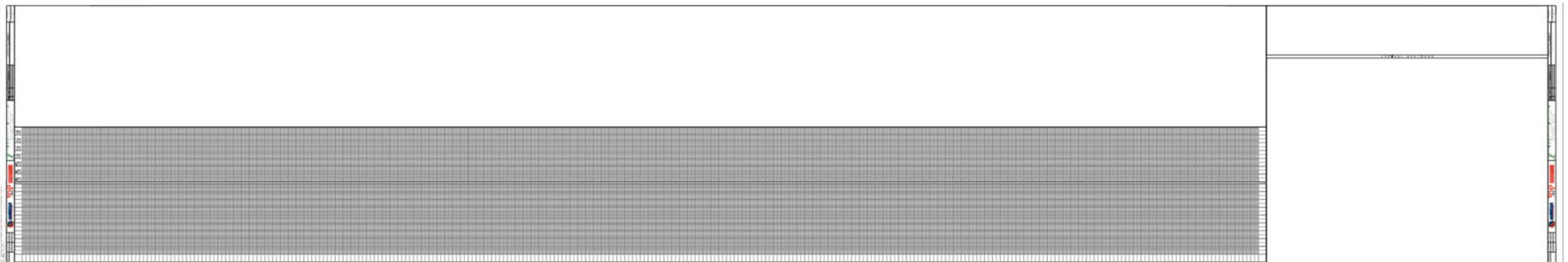
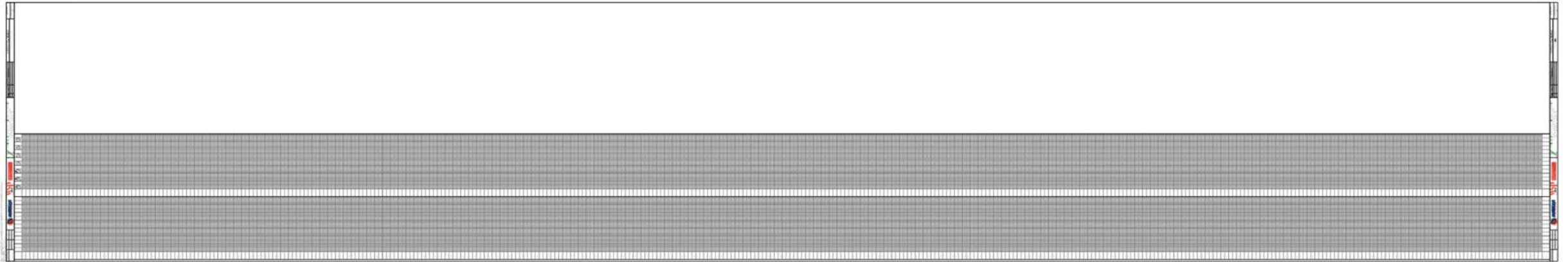
# STEPS FOR CREATING A ROLL PLAN

## Roll Plan Border Types

- Plan / Profile / Superelevation (SE) Diagram
- Plan / Profile / SE Diagram / Typical Sections

## Roll Plan Border Size

- 34" x 200"



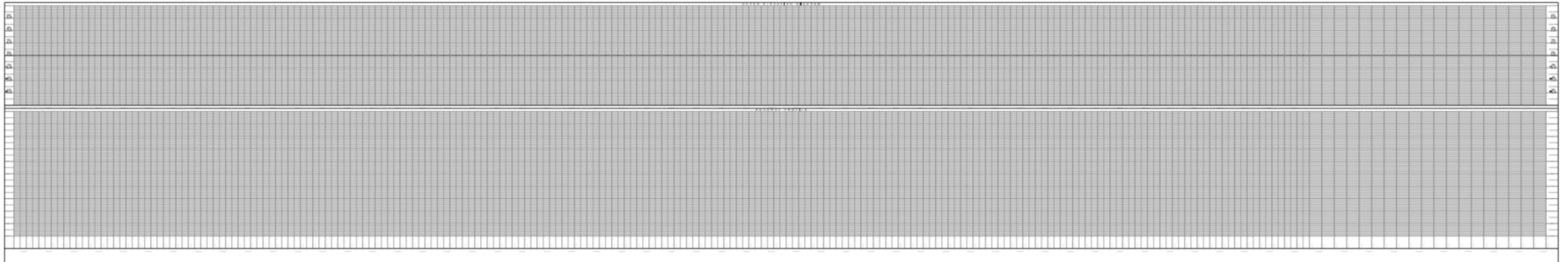
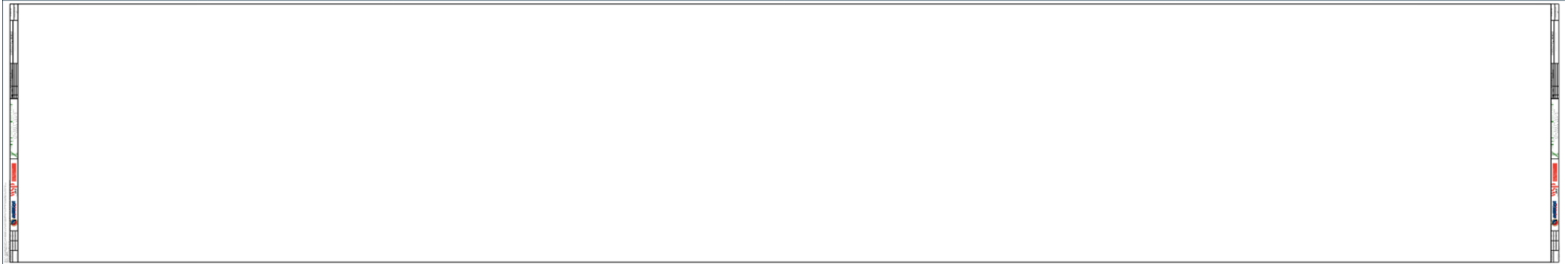
# STEPS FOR CREATING A ROLL PLAN

## Roll Plan Border Types

- Plan
- Profile / SE Diagram

## Roll Plan Border Size

- 34" x 200"



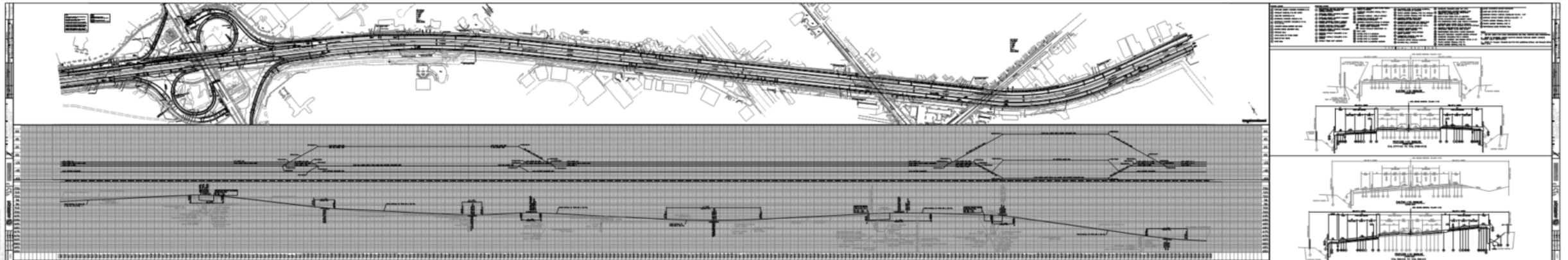
# STEPS FOR CREATING A ROLL PLAN

## Roll Plan Scale

- Smallest scale: 1" = 100'
- Recommended larger scale (1" = 50', etc.) if able to fit entire project improvement limits

## 1" = 100' Plan

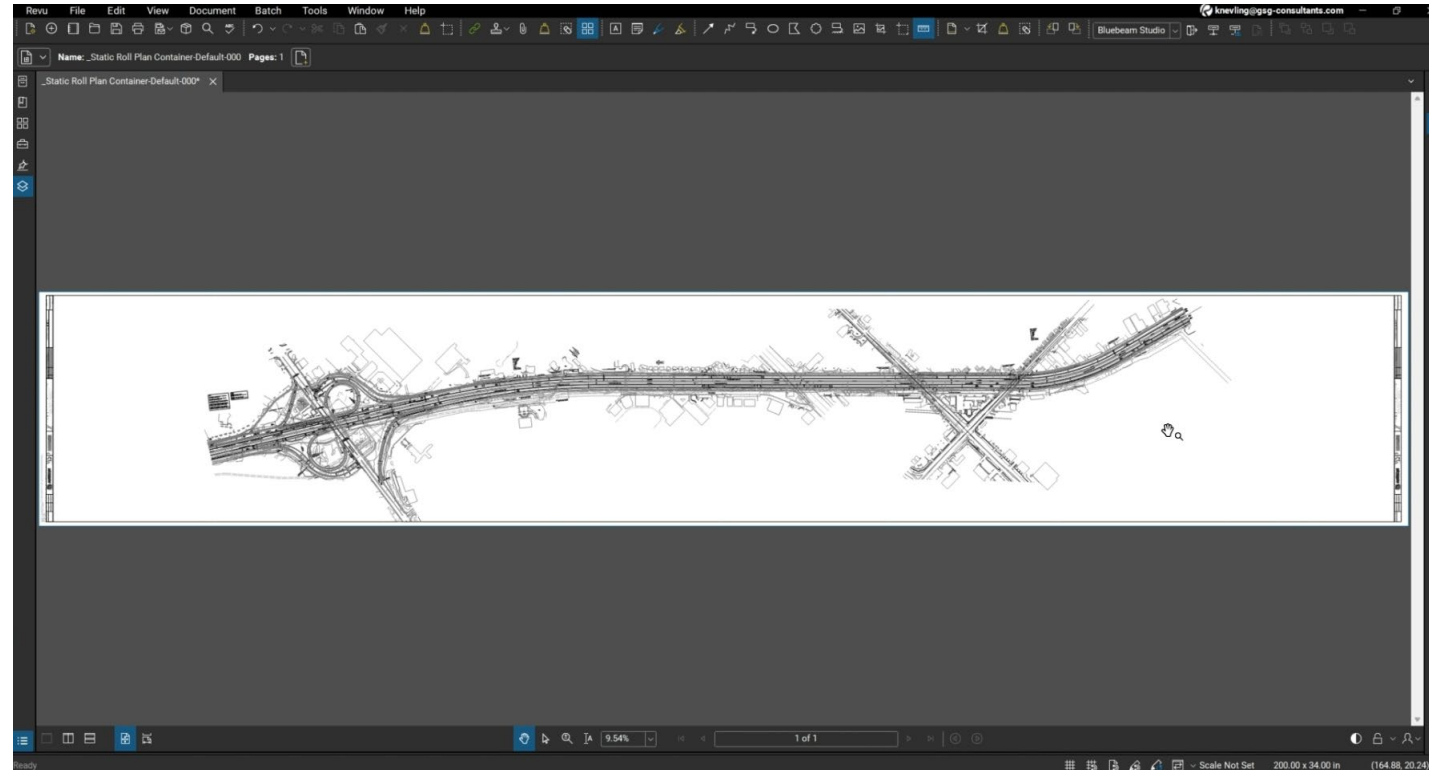
- Profile
  - Horizontal: 1" = 100'
  - Vertical: 1" = 10'
- Typical sections and plan details
  - Horizontal: 1" = 10'
  - Vertical: 1" = 5'
  - Separate 22" x 34" sheets



# STEPS FOR CREATING A ROLL PLAN

## Roll Plan Steps

- Create new sheet model file
- Reference model files
- Rotate view for best fit
- Add border file
- Scale and rotate border file
- Clip model boundaries
- Printing
  - Plot configuration
    - Static: ILT-StaticPDF.pltcfg
    - Dynamic: ILT-DynamicPDF.pltcfg
  - Pen Table
    - Static: Roll Plan\_BW-ILTollway.tbl
    - Dynamic: Roll Plan\_Color-ILTollway.tbl



# STEPS FOR CREATING A ROLL PLAN

## Illinois Tollway CADD Workspace

- Roll plan borders
- Plot configuration
- Pen table

## Illinois Tollway / IDOT Combined

- Illinois Tollway CADD Standards Manual
  - Article 3.2

### 3.2 Illinois Tollway and IDOT Environment Installation – OpenRoads Designer

There are numerous methods for utilizing configuration files. The CADD Standards have been set up to be as flexible as possible. This document will go through a method of installing the standards, however, all procedures and directives may not apply. Please discuss this with your resident CADD Manager to confirm consistency and legitimacy.

Illinois Tollway and IDOT have collaborated to create a single download to obtain both agencies' CADD Environment.

#### 3.2.1 Download IDOT Environment

At the time of this manual, the IDOT CADD environment is in the following shortcut:

[IDOT CADD Support \(illinois.gov\)](https://www.illinois.gov/IDOT/CADD/Support)

# STEPS FOR CREATING A ROLL PLAN

## Illinois Tollway / IDOT CADD Workspace

[IDOT Home](#) > [Doing Business](#) > [Industry Marketplace](#) > [Engineering Architectur...](#) > [CADD](#) > [IDOT CADD and GIS Sup...](#)

### IDOT CADD and GIS Support

[Expand All](#)

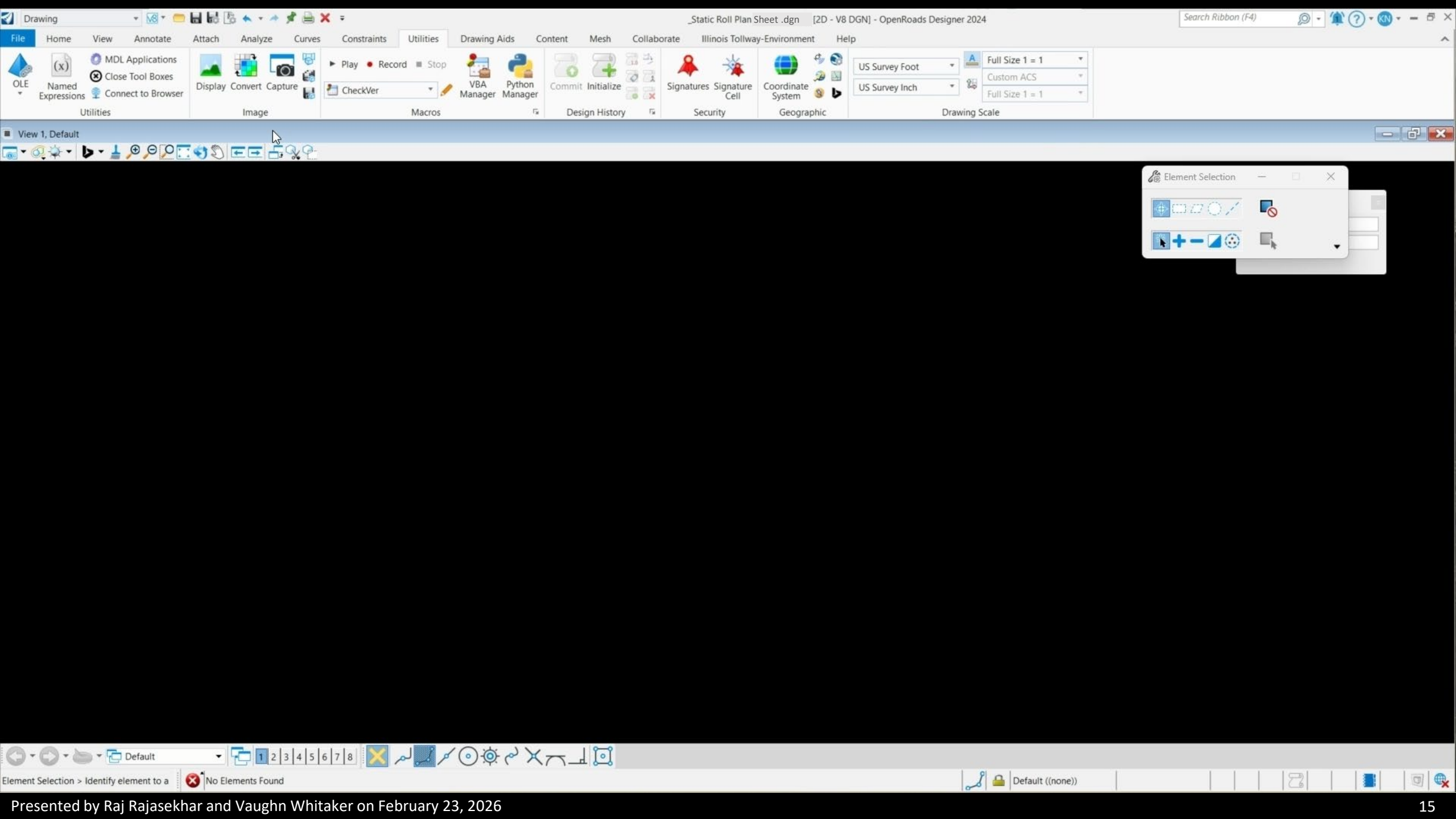
[Collapse All](#)

#### IDOT CONNECTED CADD Environment

IDOT's CADD configuration for Bentley's CONNECTED Platform of software. All district offices have been migrated to OpenRoads Designer (ORD 2024) 24.00.02.25 and OpenBridge Modeler (OBM 2024) 24.00.02.22 for production. There are various central office bureaus and nine district offices throughout Illinois. Consultants should contact the appropriate Project Manager for project related information in conjunction to using ORD / OBM on any IDOT contract. Periodic updates will be posted on this page; we recommend you sign up for the CADD Support subscription service under "Stay Connected" to be notified of updates to the CADD downloads. Please review the documents and text files included in each folder for historical details or modifications to configuration.

This version of our CADD Environment (24.25.01) is a Major schema update to the IDOT\_CONNECT Environment. Please review the "IDOTCAD\_ORD Revision Hitstory.pdf" located in the IDOT\_CONNECT\Documentation folder for additions and changes to the environment PRIOR to implementing this Environment.

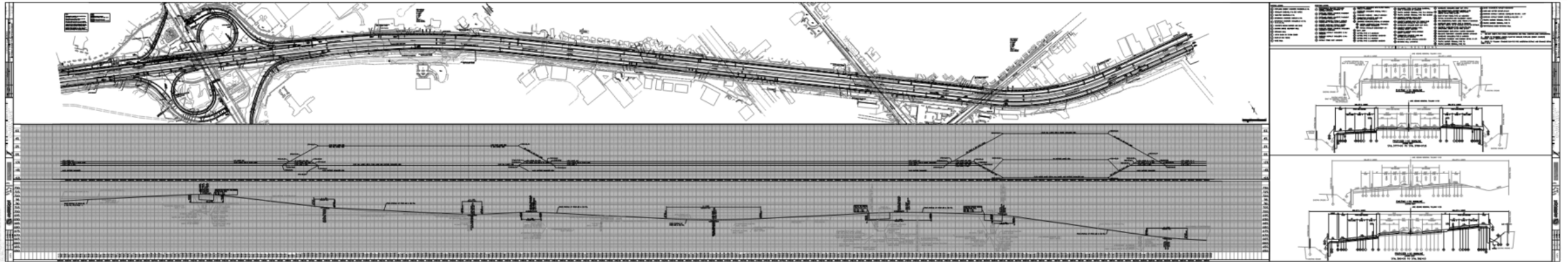
- IDOT CONNECTED Environment zip: [IDOTCAD CONNECTED Platform.zip](#) updated 12/05/25
- 2024-04-02 Consultant Setup IDOTCAD: [2024-04-02 Consultant Setup IDOTCAD.pdf](#)



# PRACTICAL USE OF ROLL PLANS

## Static and Dynamic Roll Plans

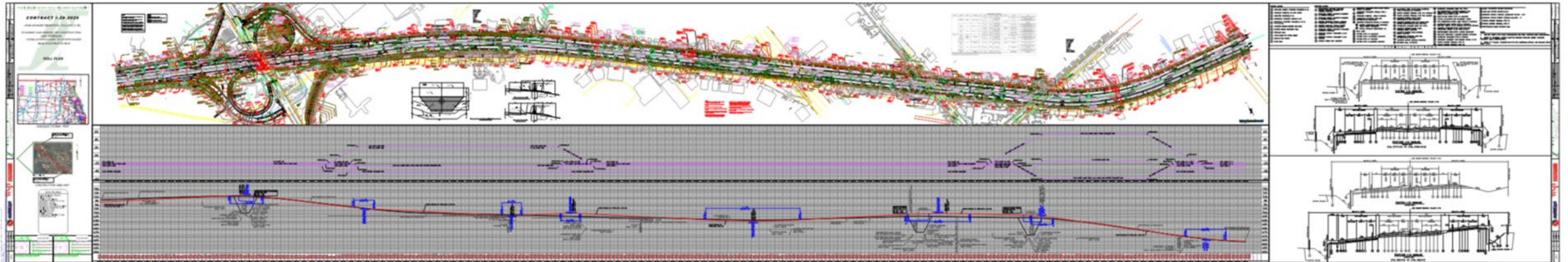
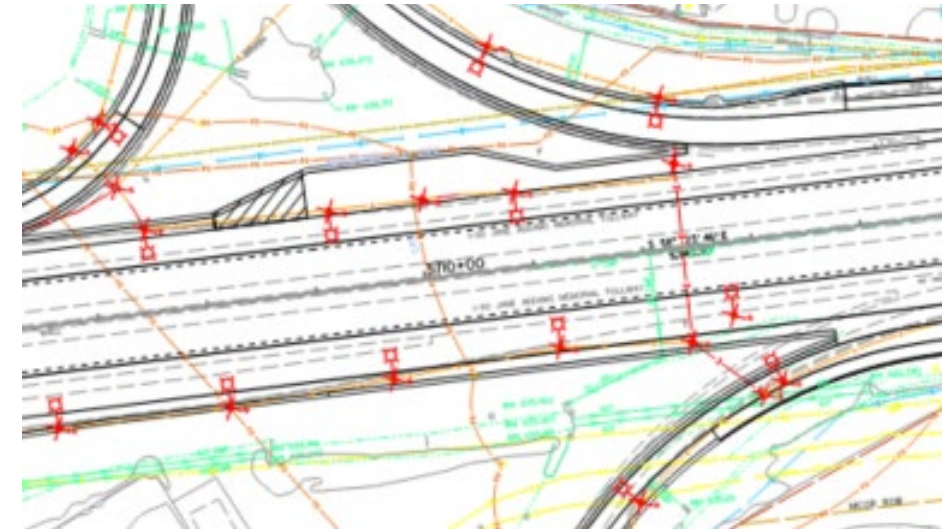
- Consolidates essential information by combining plans, profiles, etc.
- Improves understanding of the entire project – alignment, geometrics, drainage, signage
- Efficient plan production
- Useful for corridor-level communication and public meetings
- Aligns with Illinois Tollway digital delivery and model-based design initiatives



# PRACTICAL USE OF ROLL PLANS

## Static and Dynamic Roll Plans

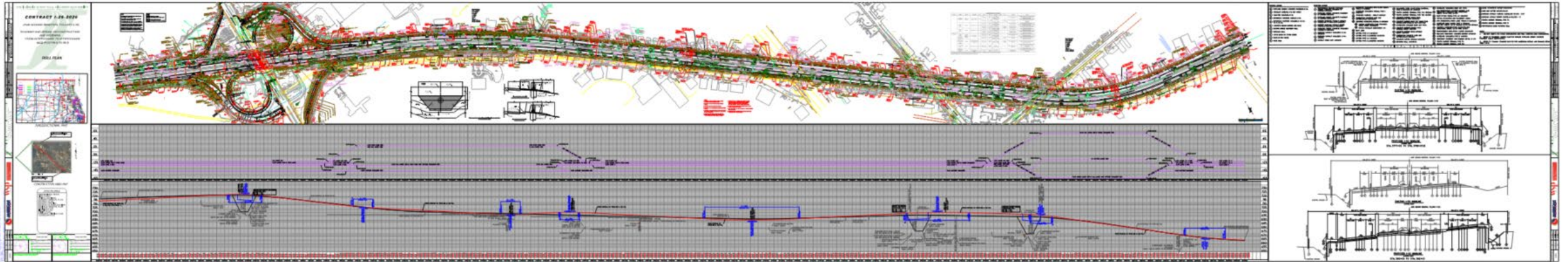
- Easily accessible in the field from digital devices
- Aids in identifying conflicts
- Effective for high-level reviews
- Layered PDFs that can be toggled on/off (dynamic)
  - Design disciplines could be isolated



# CONSIDERATIONS

## Static and Dynamic Roll Plans

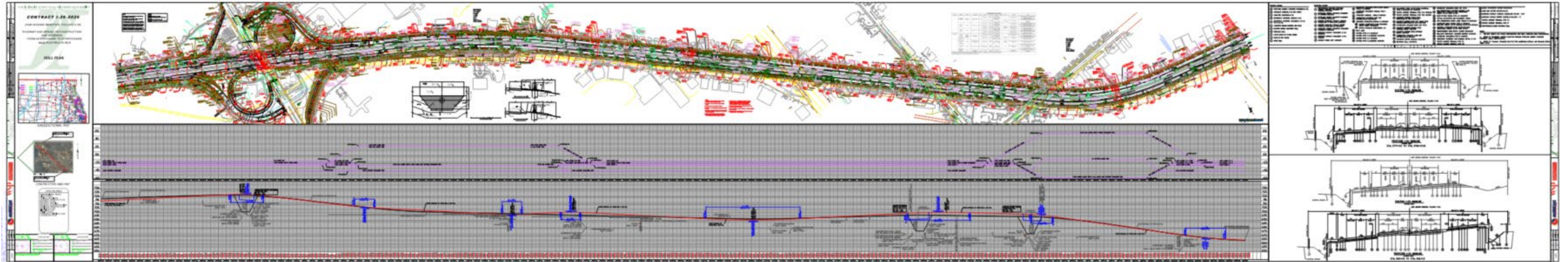
- Other project components will require traditional plan set
- Integration with contract documents
- Require specialized large-format plotting capabilities for physical plots
- Projects over 3 miles may require multiple files



# CONSIDERATIONS

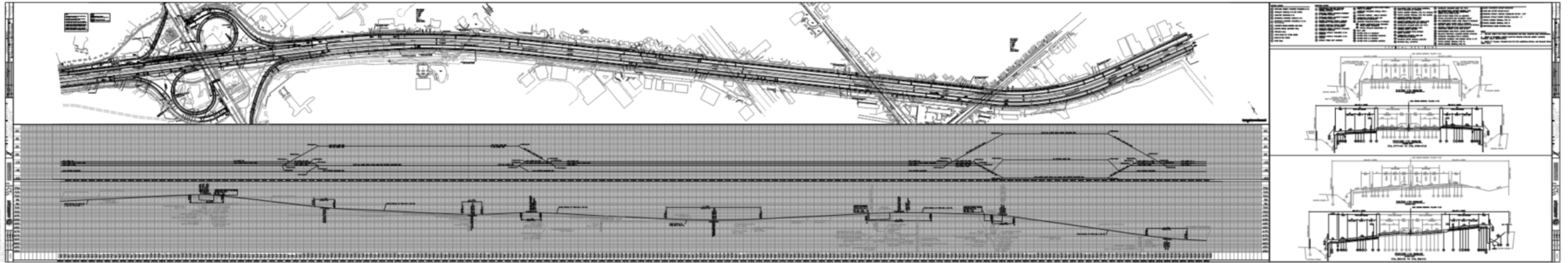
## Dynamic Roll Plans

- Training for new resources
- Do not use aerial images
- Not acceptable as a contract document

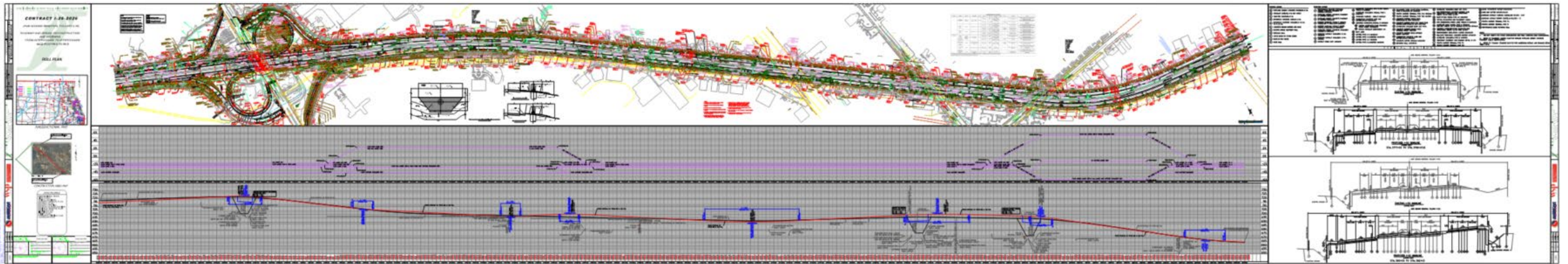


# SAMPLE ROLL PLANS ILLUSTRATION – BLUEBEAM

## Static



## Dynamic



# THANK YOU

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Vaughn Whitaker: [Vaughn.Whitaker@wsp.com](mailto:Vaughn.Whitaker@wsp.com)





# QUESTIONS

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# DIVERSITY AND STRATEGIC DEVELOPMENT

## PROGRAMS

- Business assistance
- Mentoring and training
- Construction industry training and hiring opportunities

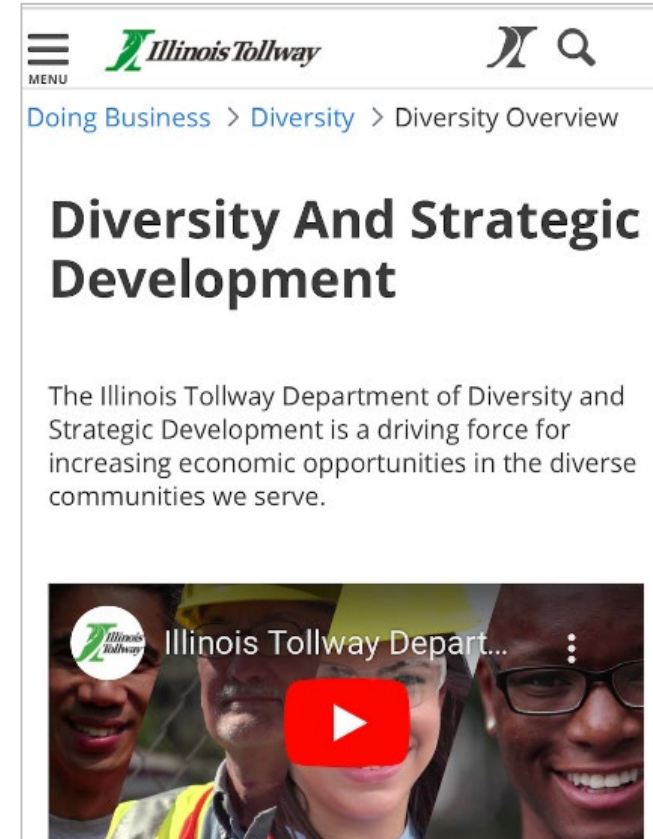
## INITIATIVES

- Virtual outreach sessions
- Training webinars
- Contracting opportunity emails

## REGISTER FOR TOLLWAY DIVERSITY ALERTS!

[lperez@getipass.com](mailto:lperez@getipass.com)

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The screenshot shows the Illinois Tollway website's "Diversity Overview" page. At the top, there is a navigation bar with the Illinois Tollway logo, a menu icon, and a search icon. Below the navigation bar, the breadcrumb trail reads "Doing Business > Diversity > Diversity Overview". The main heading is "Diversity And Strategic Development". Below the heading, a paragraph states: "The Illinois Tollway Department of Diversity and Strategic Development is a driving force for increasing economic opportunities in the diverse communities we serve." At the bottom of the screenshot, there is a video player showing a group of diverse people smiling, with a red play button in the center. The video title is partially visible as "Illinois Tollway Depart...".



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# SOCIAL MEDIA



**THANK YOU**

