CTDOT Right-of-Way Map Mosaic Pilot Project

Implementation and Details

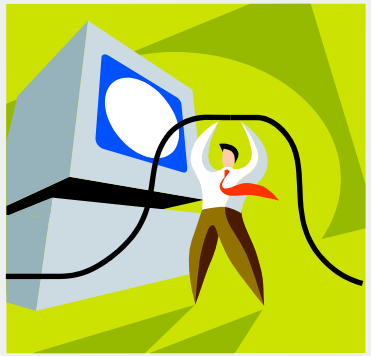
John Durling, CT DOT

Mark Goetz, MetroCOG

Agenda

- Collaboration
- Image Records Management System (IRMS)
- Issues Addressed by ROW Map Mosaic Project
- ConnDOT ROW Plans
- Geodatabase Elements
  - Vector Data
  - Mosaic
- ArcGIS Online Web Application Demo
- Next Steps

Our Consultant, MetroCog, and several CONNDOT units contributed to making the IRMS/GIS and the Mosaic projects a success:

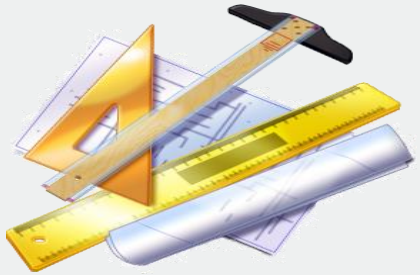


Consultant

Information Technology

Central Surveys

Planning



Engineering

MetroCog

CTDOT ROW Technology Issues in the 1990's:

IMAGING ISSUES:

- Bureau Records Center (BRC)

GEOSPATIAL ISSUES:

- Property Management (Excess Property)
- Billboard Permits
- Acquisitions (Project Management)

ConnDot's Bureau Records Center (BRC):

Current and Future Solutions:

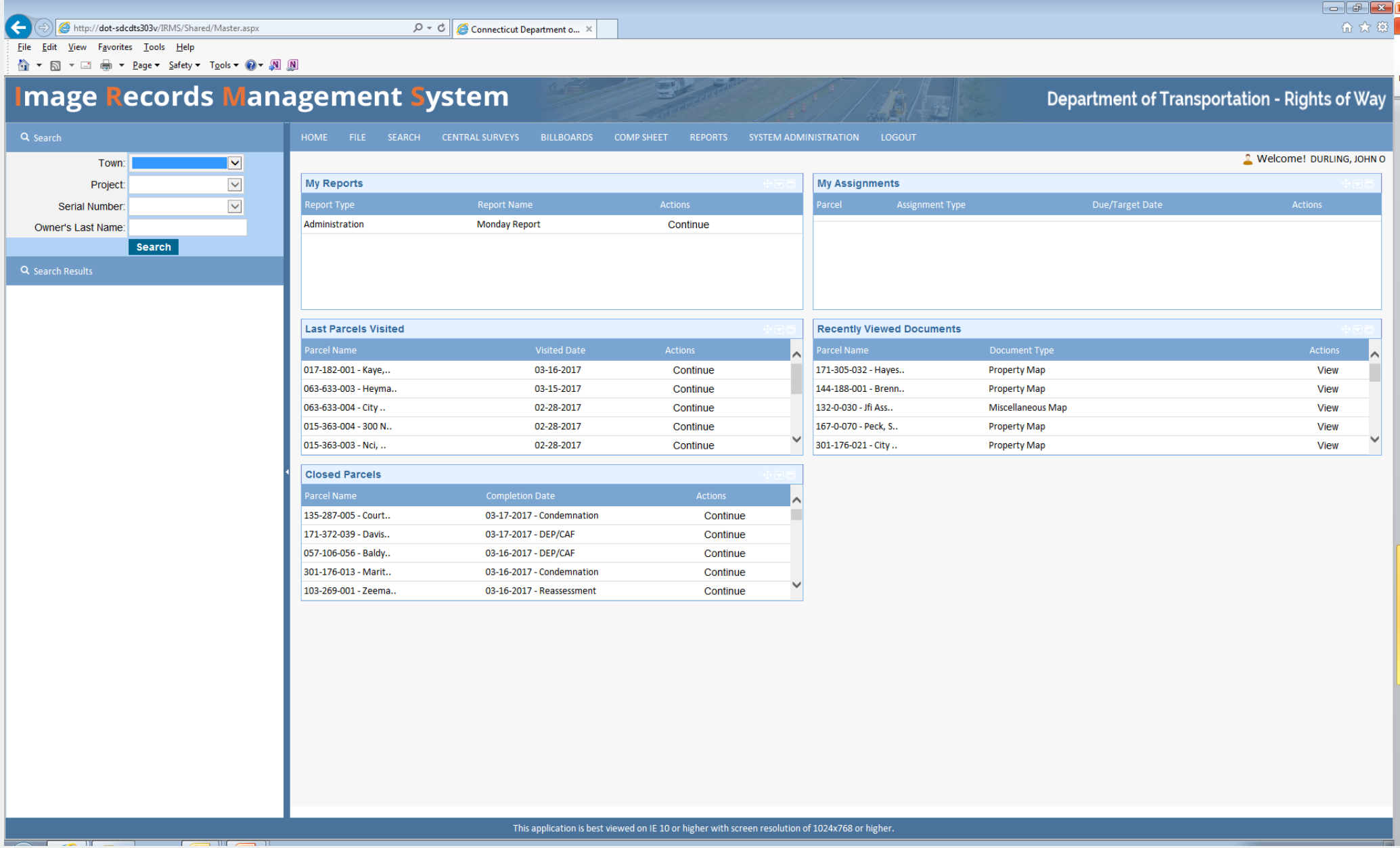
Image Records Management System (IRMS)

- Document Scanning and Indexing
- Project Management/GIS link

GIS Applications in Rights of Way

- Excess Property Inventory
- Billboard Inventory (OASIS)
- Property map conversion from Microstation design files to GIS formatted files

Overview of the Image Records Management System:



CONNECTICUT DEPARTMENT OF TRANSPORTATION

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Search IRMS Database for Parcel Files:

http://dot-sdcdts303v/IRMS/Shared/Master.aspx

Connecticut Department o...

File Edit View Favorites Tools Help

Page Safety Tools

Image Records Management System

Department of Transportation - Rights of Way

Search

Town:

Project:

Serial Number:

Owner's Last Name:

000 - Unlinked Row Maps
001 - Andover
002 - Ansonia
003 - Ashford
004 - Avon
005 - Barkhamsted
006 - Beacon Falls
007 - Berlin
008 - Bethany
009 - Bethel
010 - Bethlehem
011 - Bloomfield
012 - Bolton
013 - Bozrah
014 - Branford
015 - Bridgeport
016 - Bridgewater
017 - Bristol
018 - Brookfield
019 - Brooklyn
020 - Burlington
021 - Canaan
022 - Canterbury
023 - Canton
024 - Chaplin
025 - Cheshire
026 - Chester
027 - Clinton
028 - Colchester

Search Results

HOME FILE SEARCH CENTRAL SURVEYS BILLBOARDS COMP SHEET REPORTS SYSTEM ADMINISTRATION LOGOUT

Welcome! DURLING, JOHN O

My Reports

Report Type	Report Name	Actions
Administration	Monday Report	Continue

My Assignments

Parcel	Assignment Type	Due/Target Date	Actions

Last Parcels Visited

Parcel Name	Visited Date	Actions
017-182-001 - Kaye,..	03-16-2017	Continue
063-633-003 - Heyma..	03-15-2017	Continue
063-633-004 - City ..	02-28-2017	Continue
015-363-004 - 300 N..	02-28-2017	Continue
015-363-003 - Nci, ..	02-28-2017	Continue

Recently Viewed Documents

Parcel Name	Document Type	Actions
171-305-032 - Hayes..	Property Map	View
144-188-001 - Brenn..	Property Map	View
132-0-030 - Jfi Ass..	Miscellaneous Map	View
167-0-070 - Peck, S..	Property Map	View
301-176-021 - City ..	Property Map	View

Closed Parcels

Parcel Name	Completion Date	Actions
135-287-005 - Court..	03-17-2017 - Condemnation	Continue
171-372-039 - Davis..	03-17-2017 - DEP/CAF	Continue
057-106-056 - Baldy..	03-16-2017 - DEP/CAF	Continue
301-176-013 - Marit..	03-16-2017 - Condemnation	Continue
103-269-001 - Zeema..	03-16-2017 - Reassessment	Continue

This application is best viewed on IE 10 or higher with screen resolution of 1024x768 or higher.

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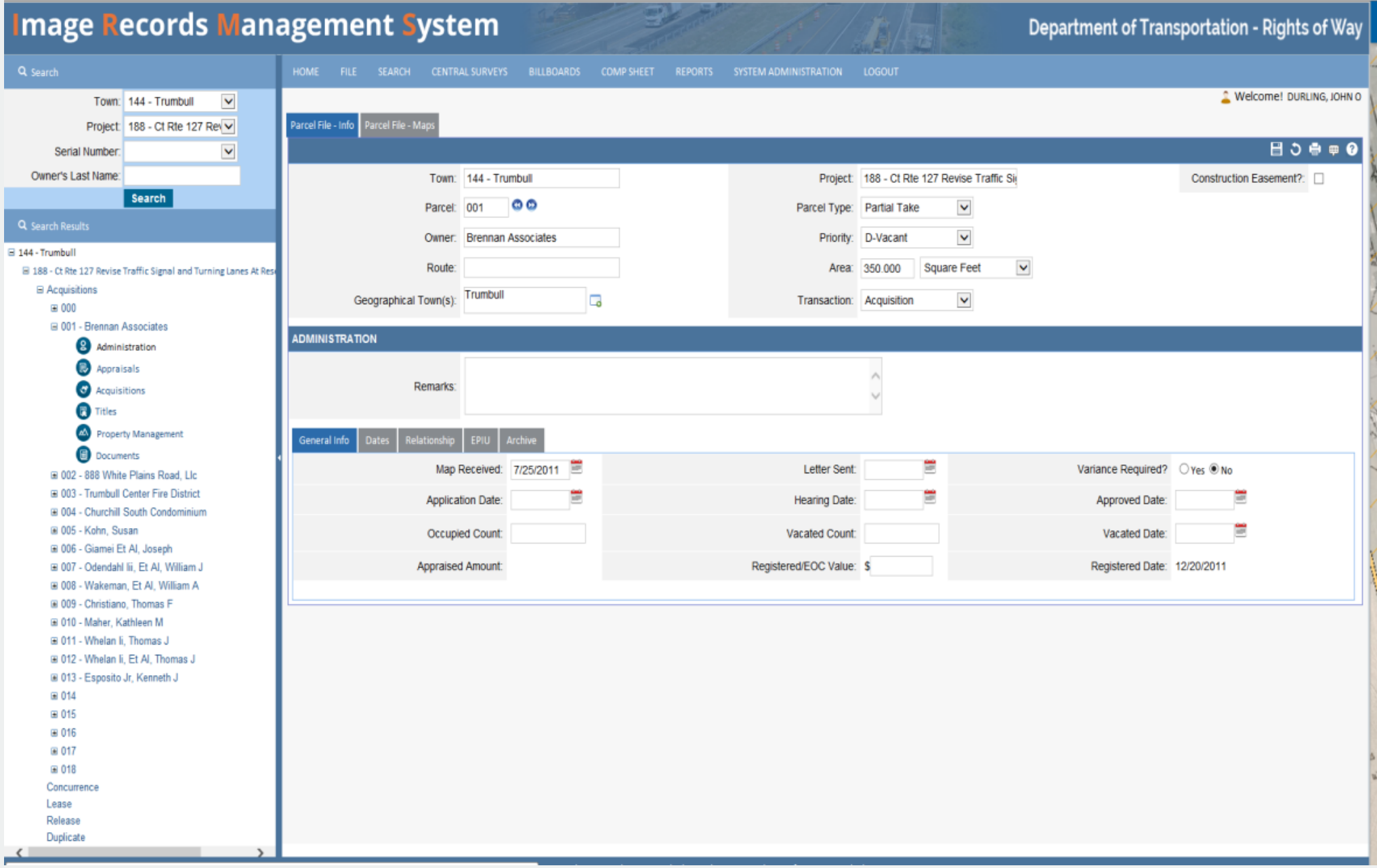
IRMS Details



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IRMS Details

Image Records Management System

Department of Transportation - Rights of Way

Search

Town: 144 - Trumbull

Project: 188 - Ct Rte 127 Rev

Serial Number:

Owner's Last Name:

Search

Search Results

144 - Trumbull

188 - Ct Rte 127 Revise Traffic Signal and Turning Lanes At Res

Acquisitions

000

001 - Brennan Associates

Administration

Appraisals

Acquisitions

Titles

Property Management

Documents

002 - 888 White Plains Road, Llc

003 - Trumbull Center Fire District

004 - Churchill South Condominium

005 - Kohn, Susan

006 - Giamei Et Al, Joseph

007 - Odendahl Iii, Et Al, William J

008 - Wakeman, Et Al, William A

009 - Christiano, Thomas F

010 - Maher, Kathleen M

011 - Whelan Ii, Thomas J

012 - Whelan Ii, Et Al, Thomas J

013 - Esposito Jr, Kenneth J

014

015

016

017

018

Concurrence

Lease

Release

Duplicate

HOME | FILE | SEARCH | CENTRAL SURVEYS | BILLBOARDS | COMP SHEET | REPORTS | SYSTEM ADMINISTRATION | LOGOUT

Welcome! DURLING, JOHN O

Parcel File - Info | Parcel File - Maps

Town: 144 - Trumbull

Parcel: 001

Owner: Brennan Associates

Route:

Geographical Town(s): Trumbull

Project: 188 - Ct Rte 127 Revise Traffic Si

Parcel Type: Partial Take

Priority: D-Vacant

Area: 350.000 Square Feet

Transaction: Acquisition

Construction Easement?:

EXISTING APPRAISAL VALUATIONS

Add New | Cancel

Valuation ID	Date Received	Appraiser(s)	Staffer(s)	Out Division Date	Registered Value	Supervisor	Actions
1	05-31-2012	KERR, JOHN P		07-16-2012		MARCHI, BRIAN C	

APPRAISALS

Date Received:

Supervisor Assigned:

Release/Lease Type:

Type:

Agent:

Target Date:

STAFFING

Staffer	To Staffing	Bid Sent	Fee Report	Assign Letter From Staff Date	Staffing Completed	Actions

APPRAISALS

To Appraiser	Appraiser	Due Date	Format Type	Value	Appraisal Completed	Actions
				$		

FINAL

Registered Value	Date Out Of Division
$	

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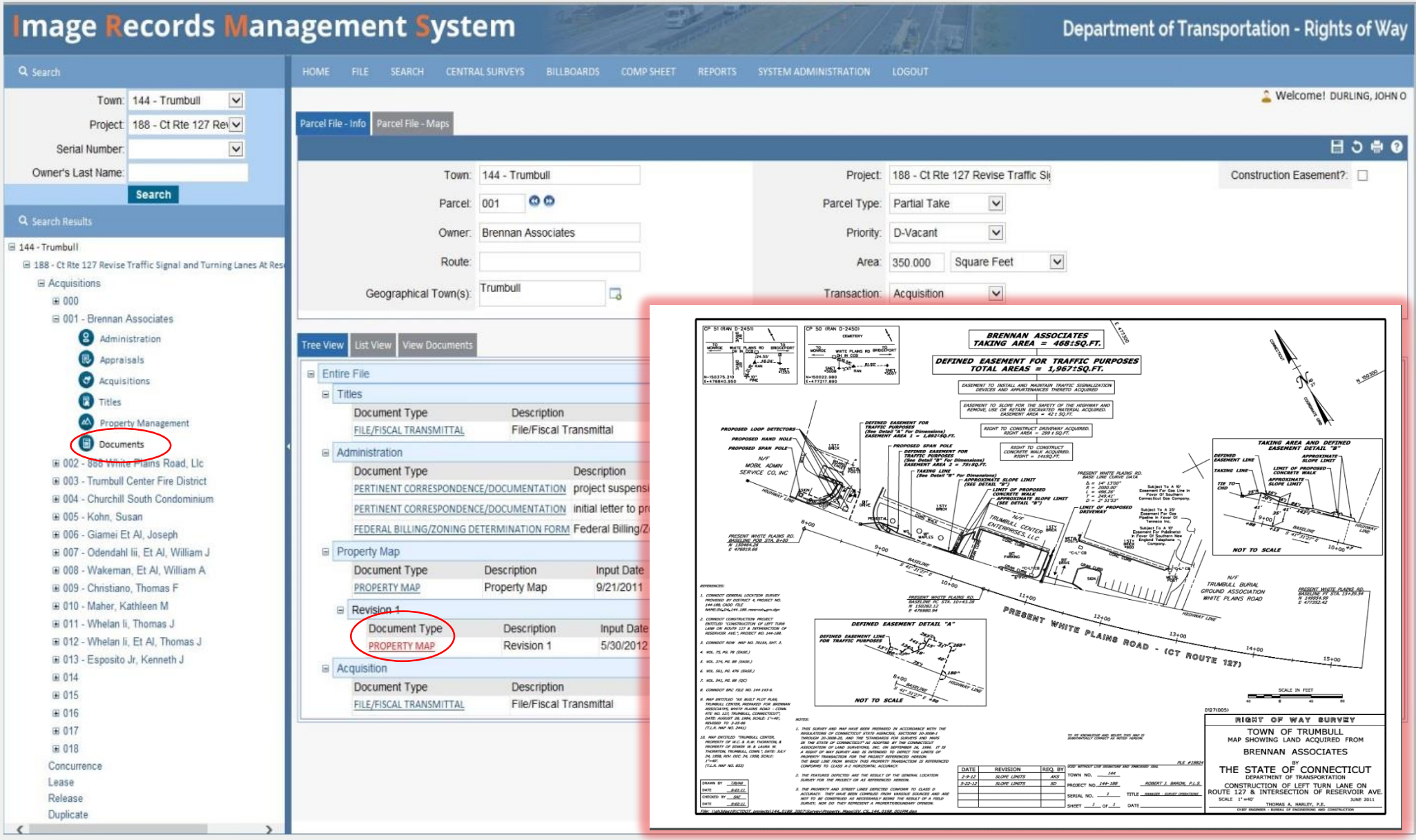
Linked Documents: Survey Property ("Transaction") Maps



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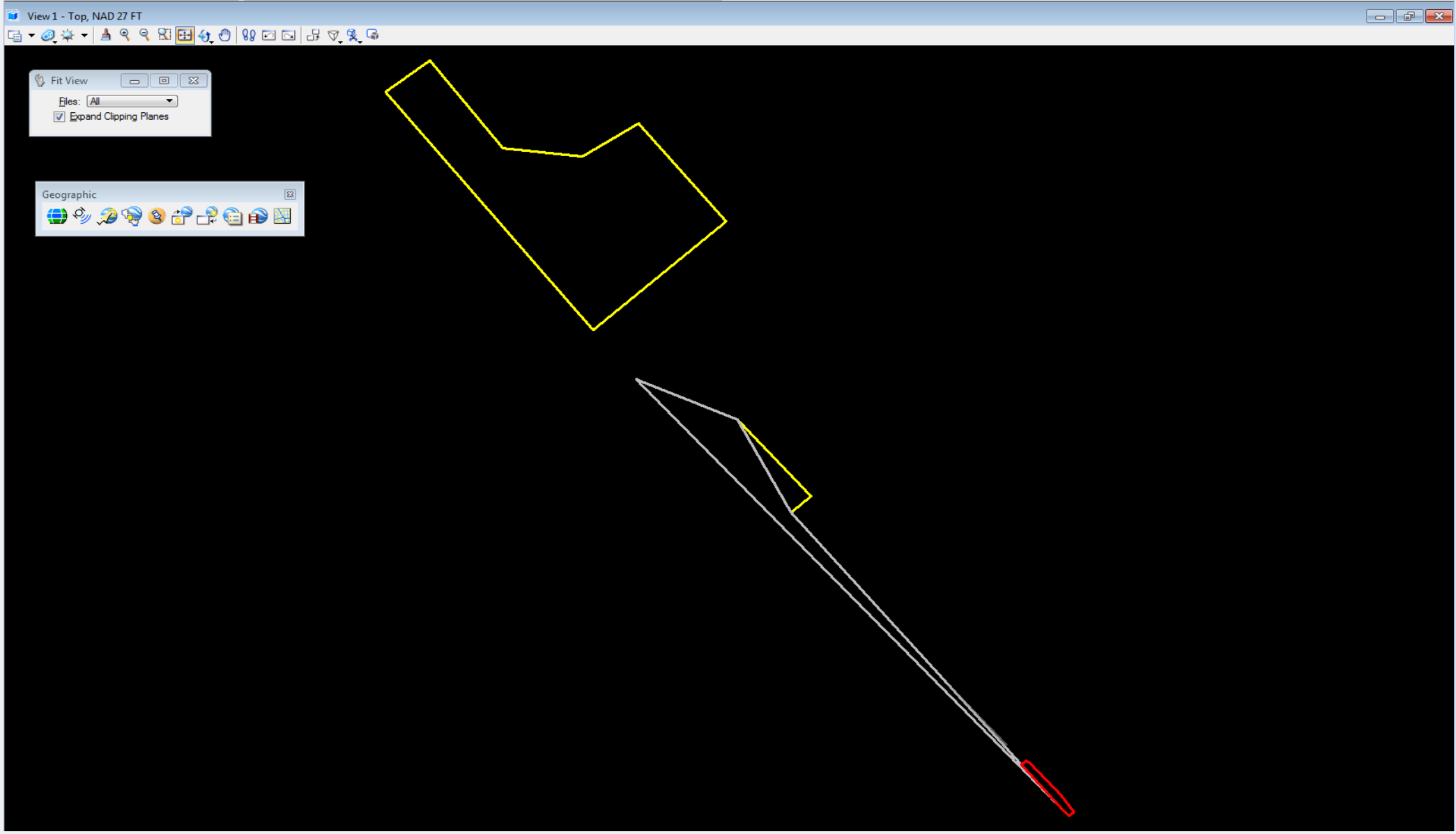
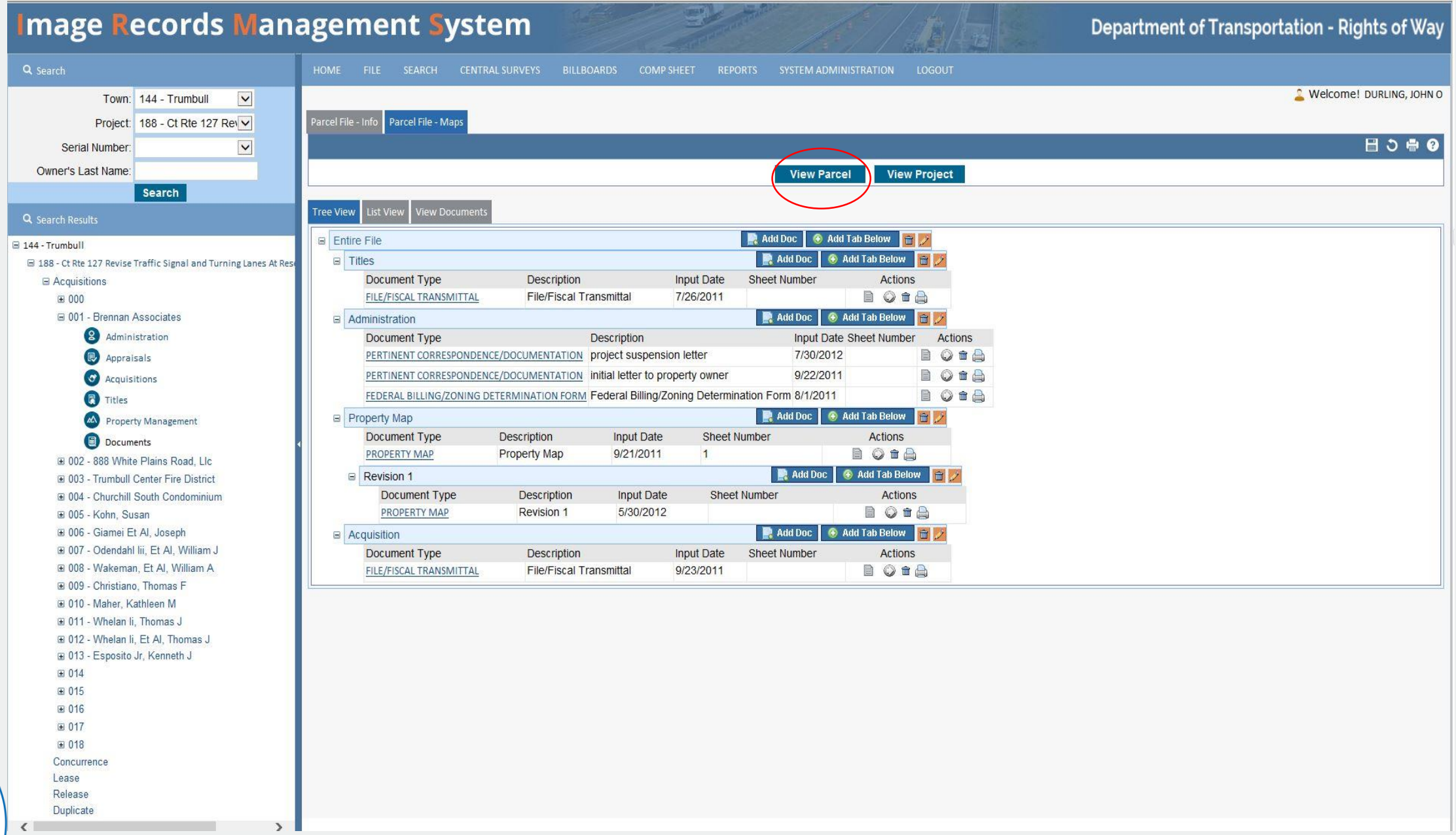
Microstation to GIS



Link to GIS



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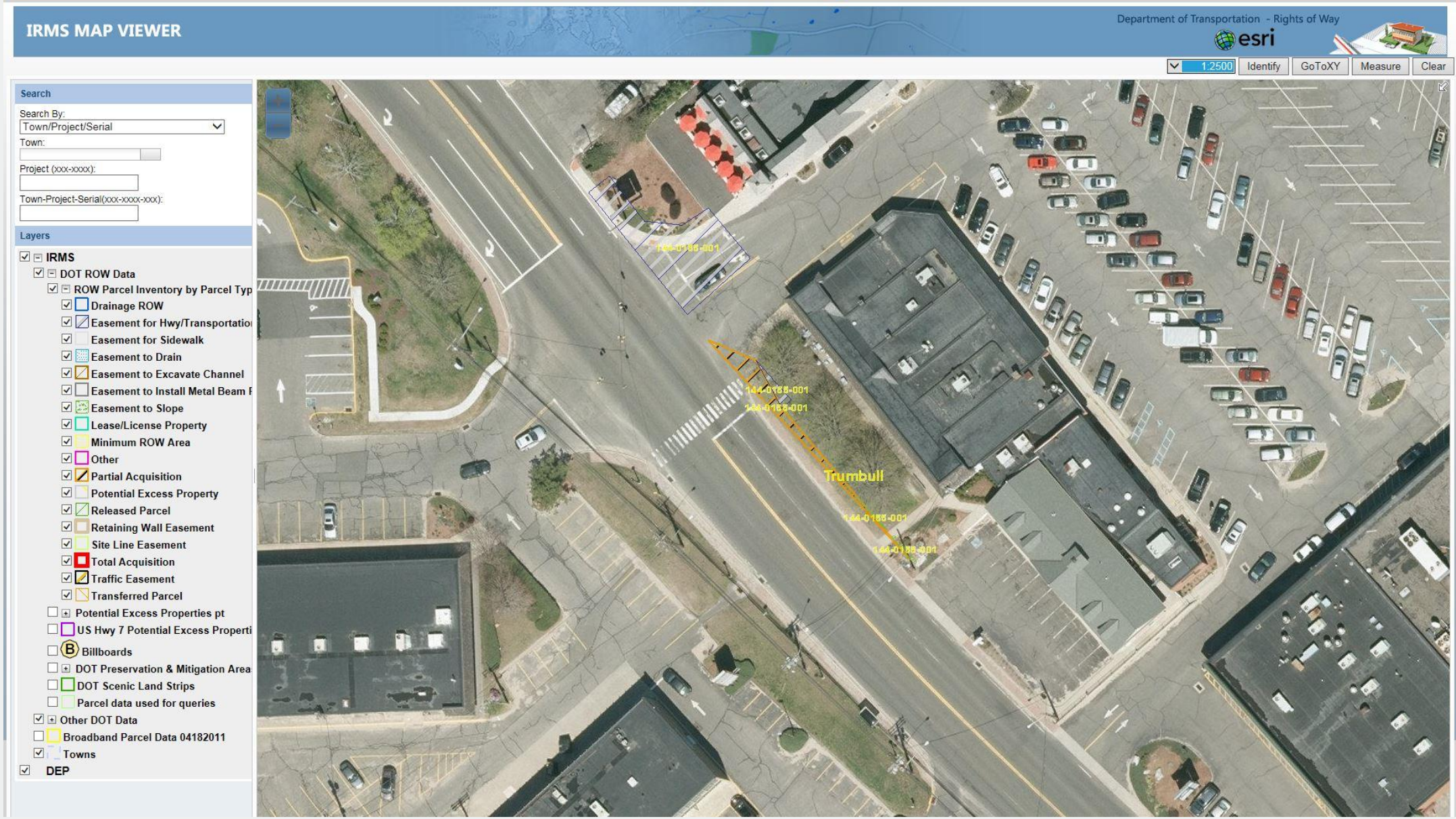
Existing GIS Integration with the IRMS



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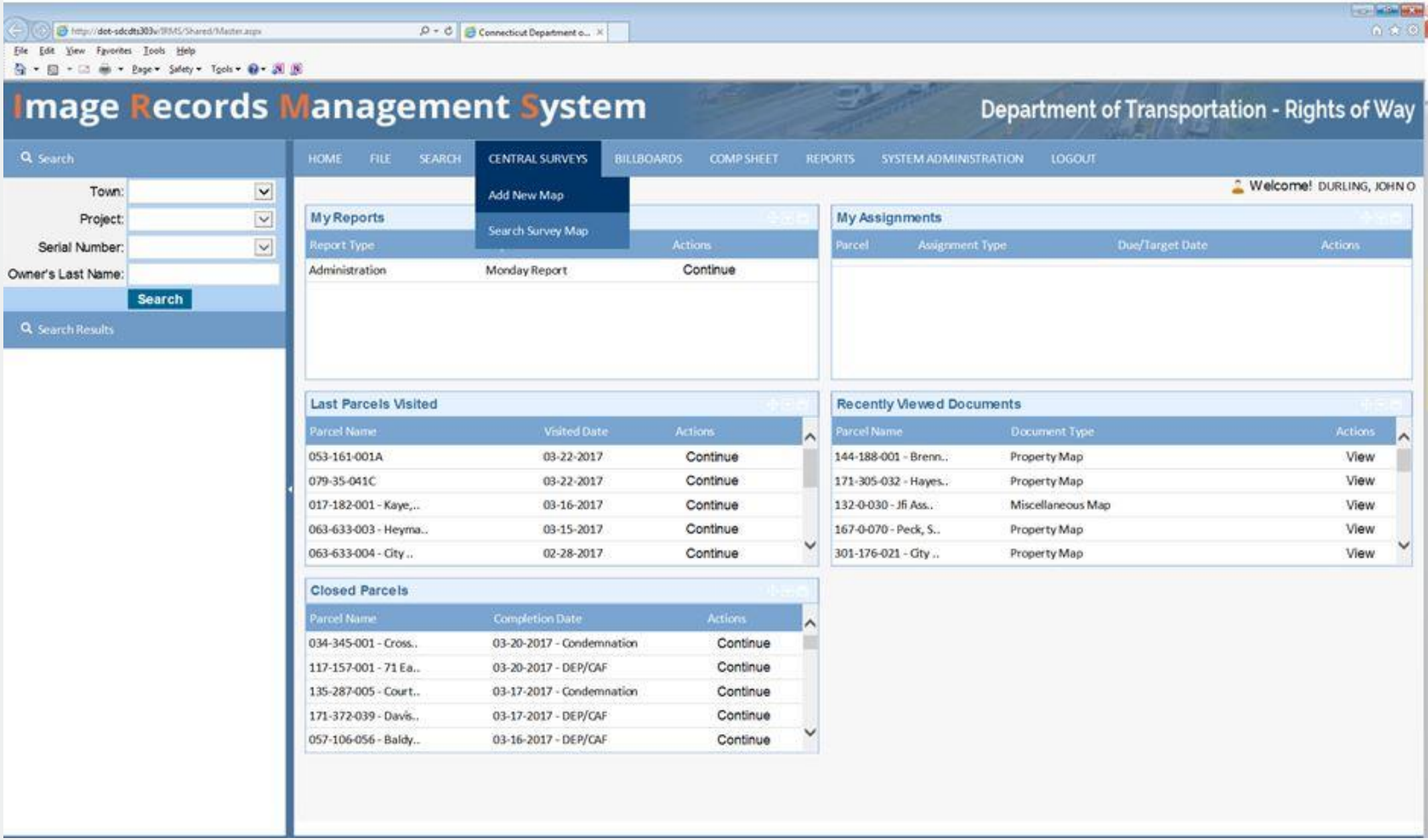
ROW Survey Plans



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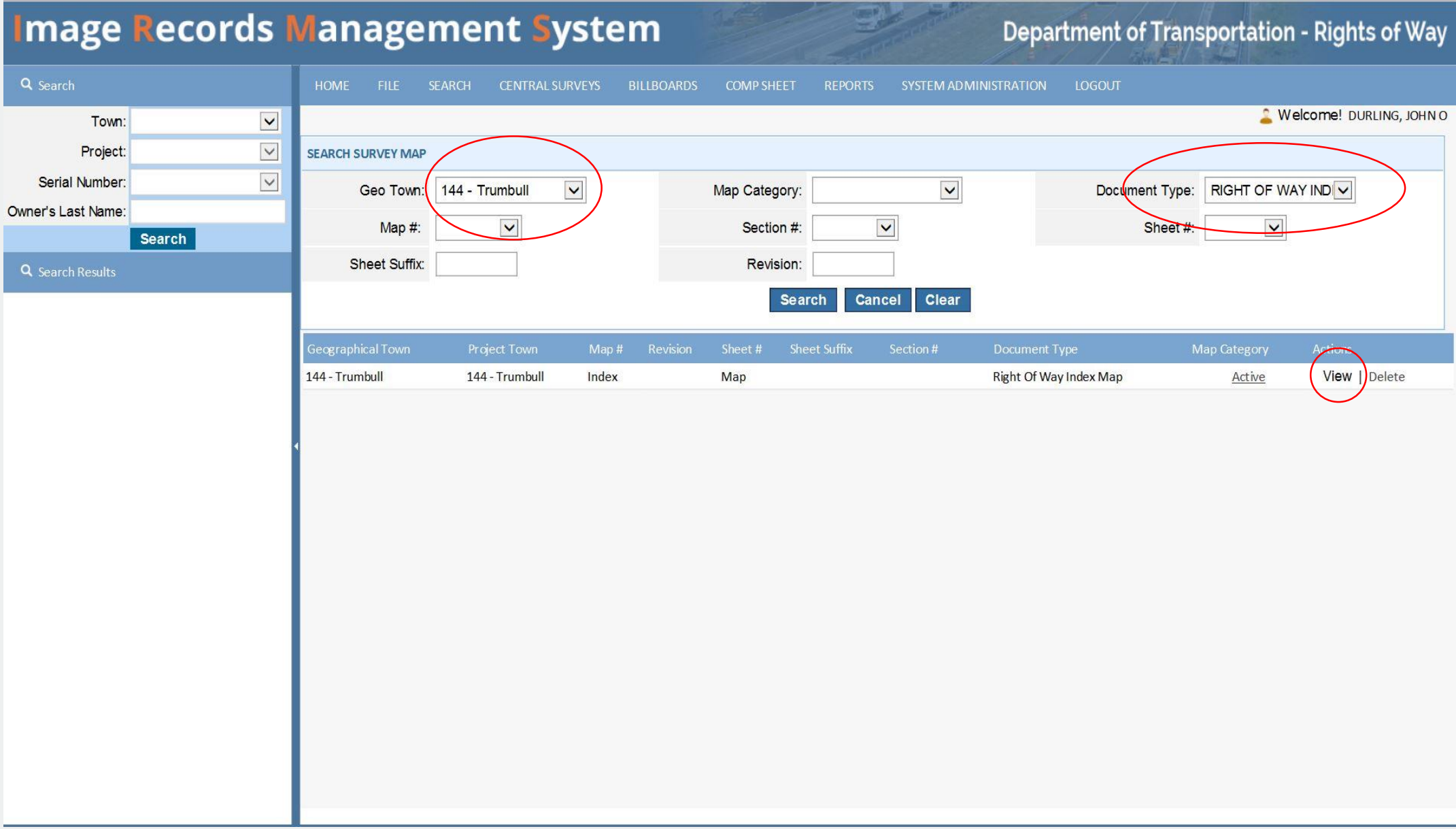
Finding ROW Survey Plans



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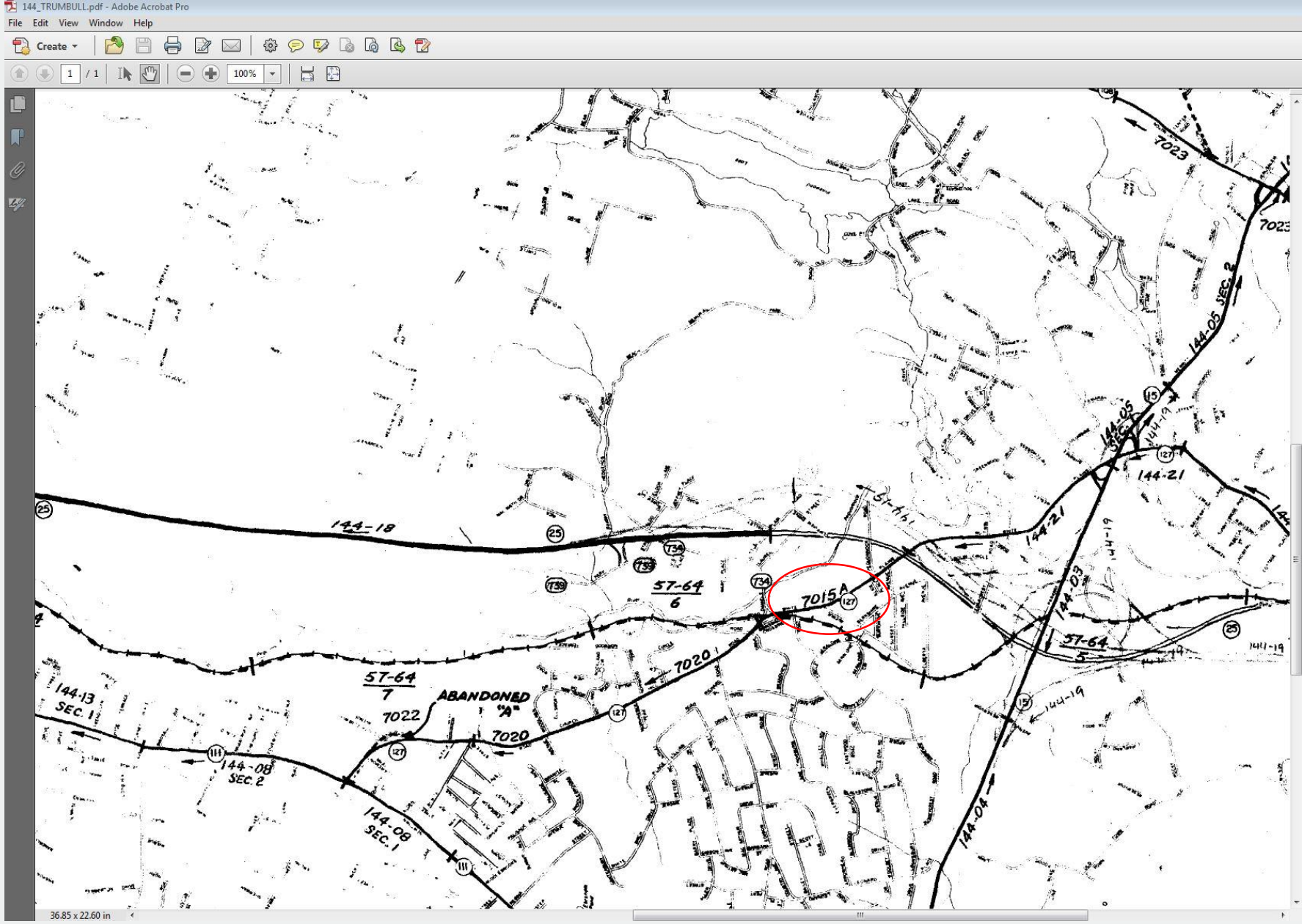
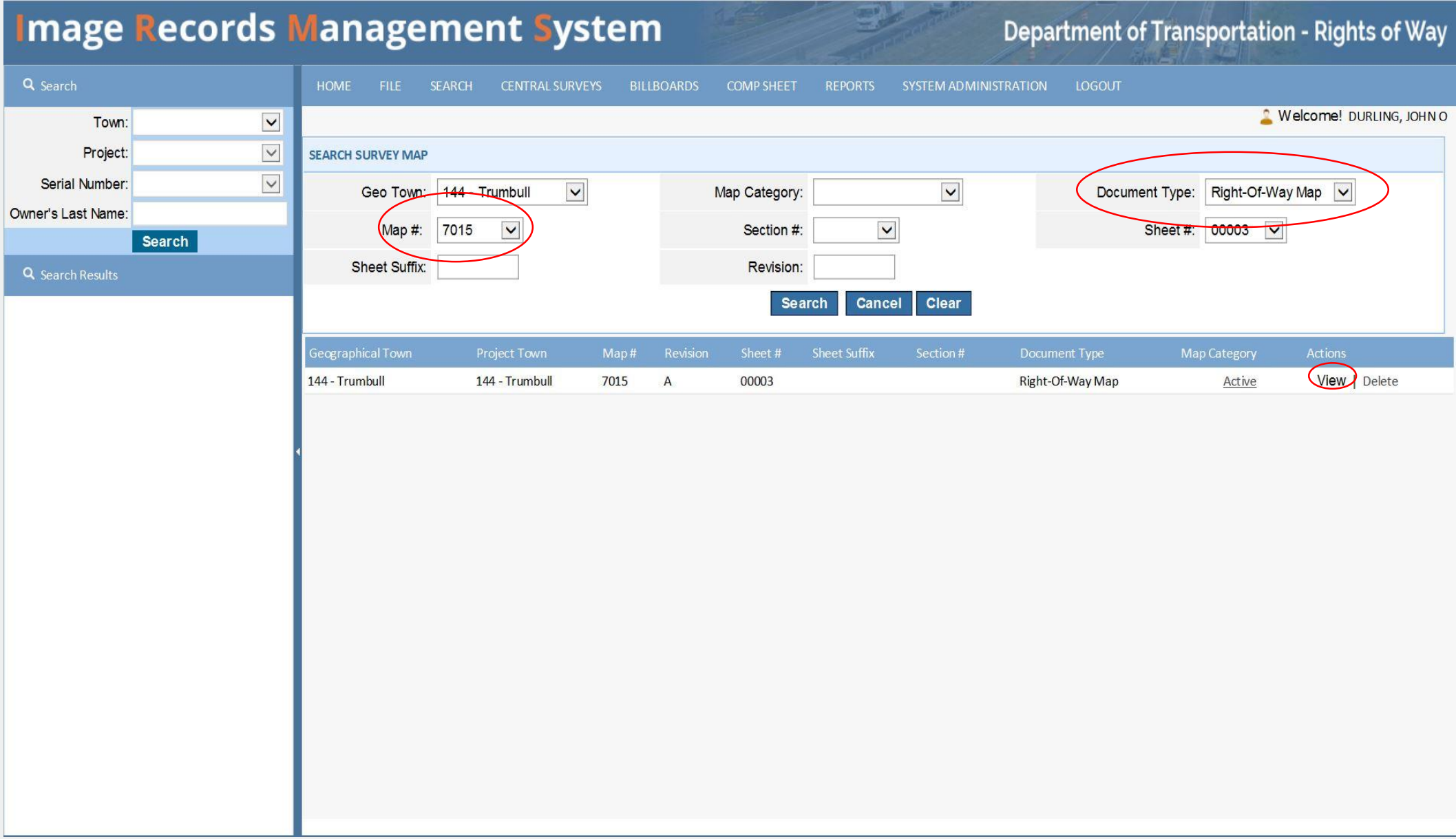
ROW Index Map



ROW Plan Search



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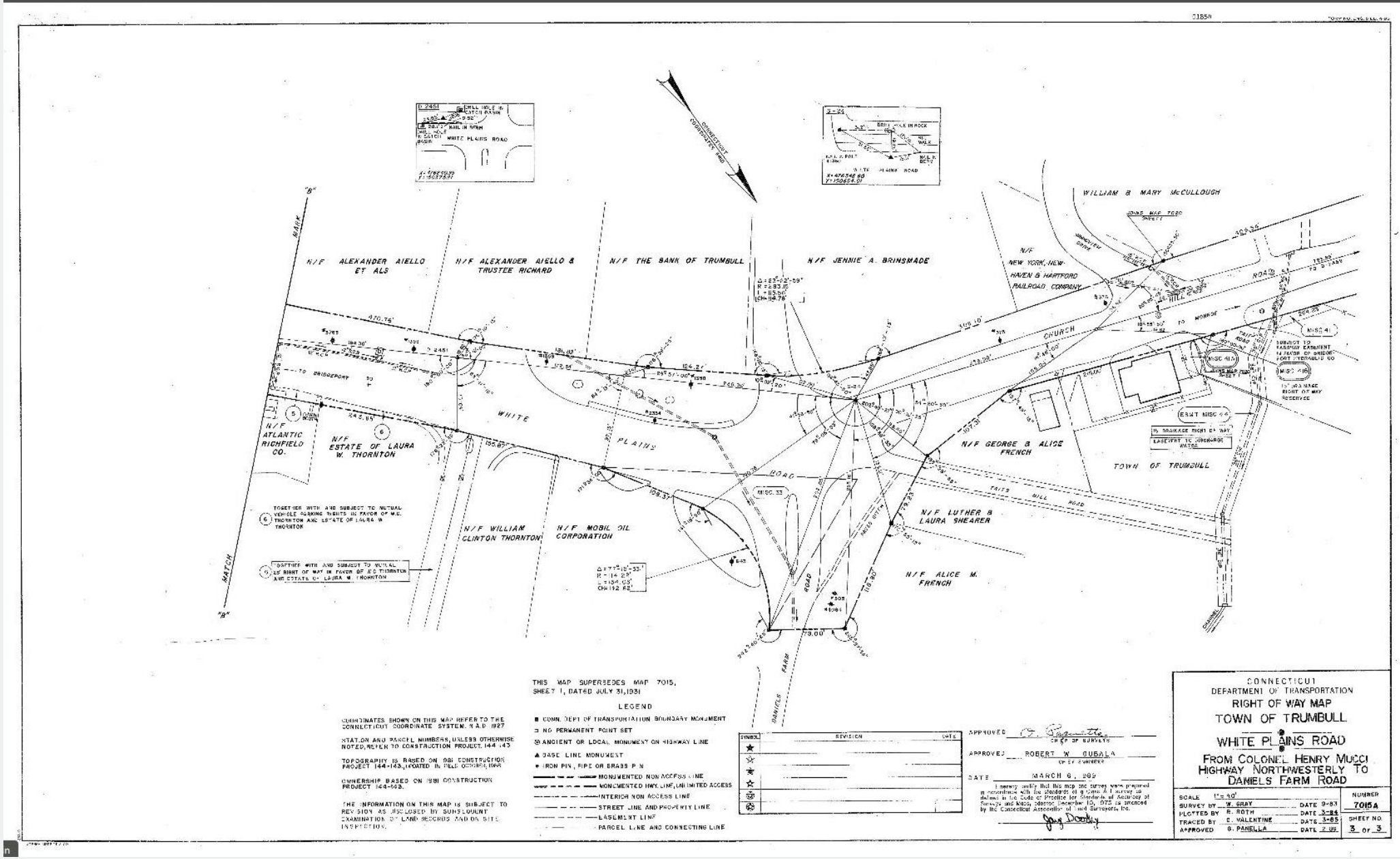
ROW Survey Plan

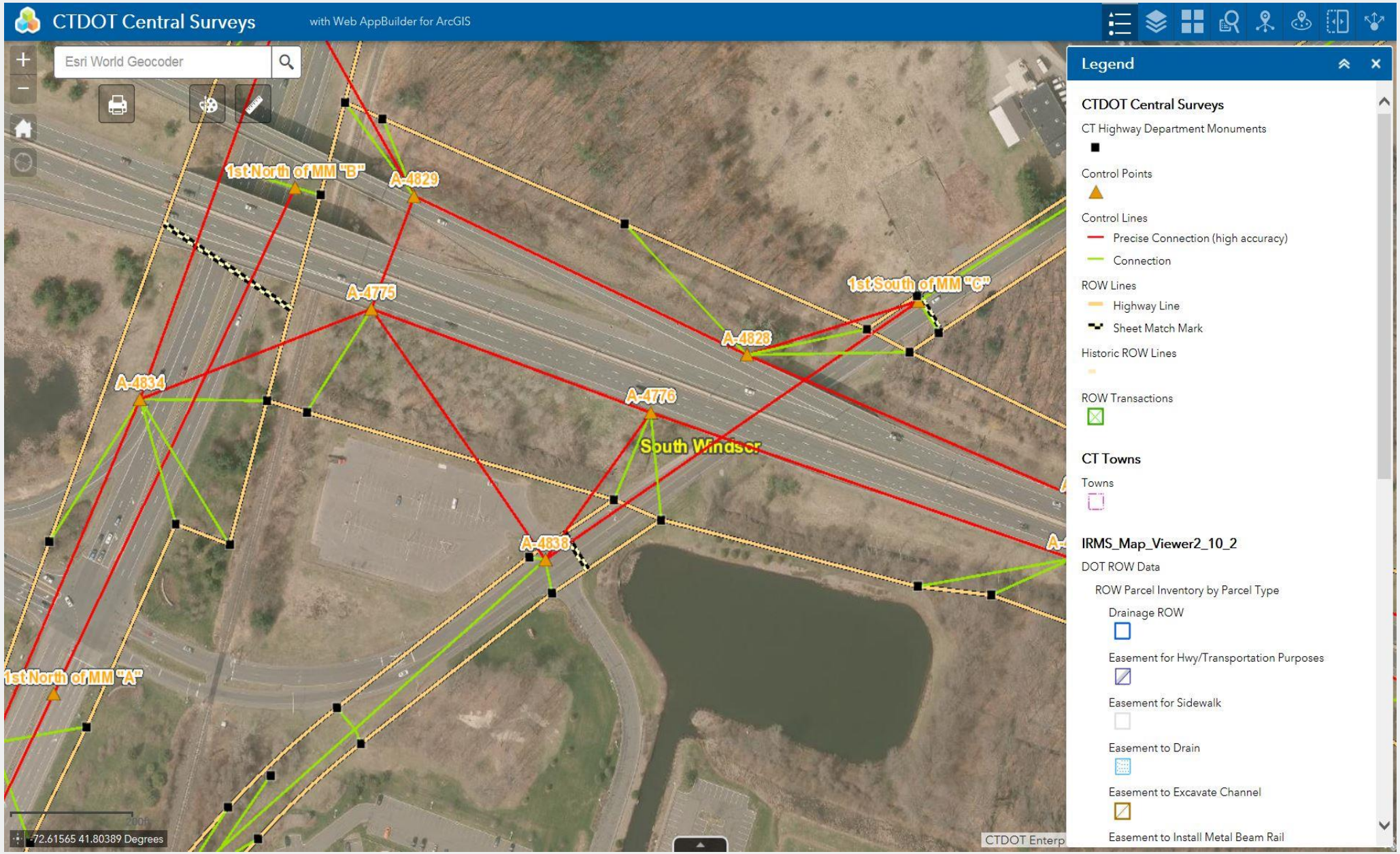


Pulling it together:

Issues Addressed by Mosaic Pilot Project

- Lack of Accessibility To ROW Vector Line Work
- ROW Maps Not Geo-Referenced
- ROW Line Not Maintained

Lack of Accessibility To ROW Vector Line Work



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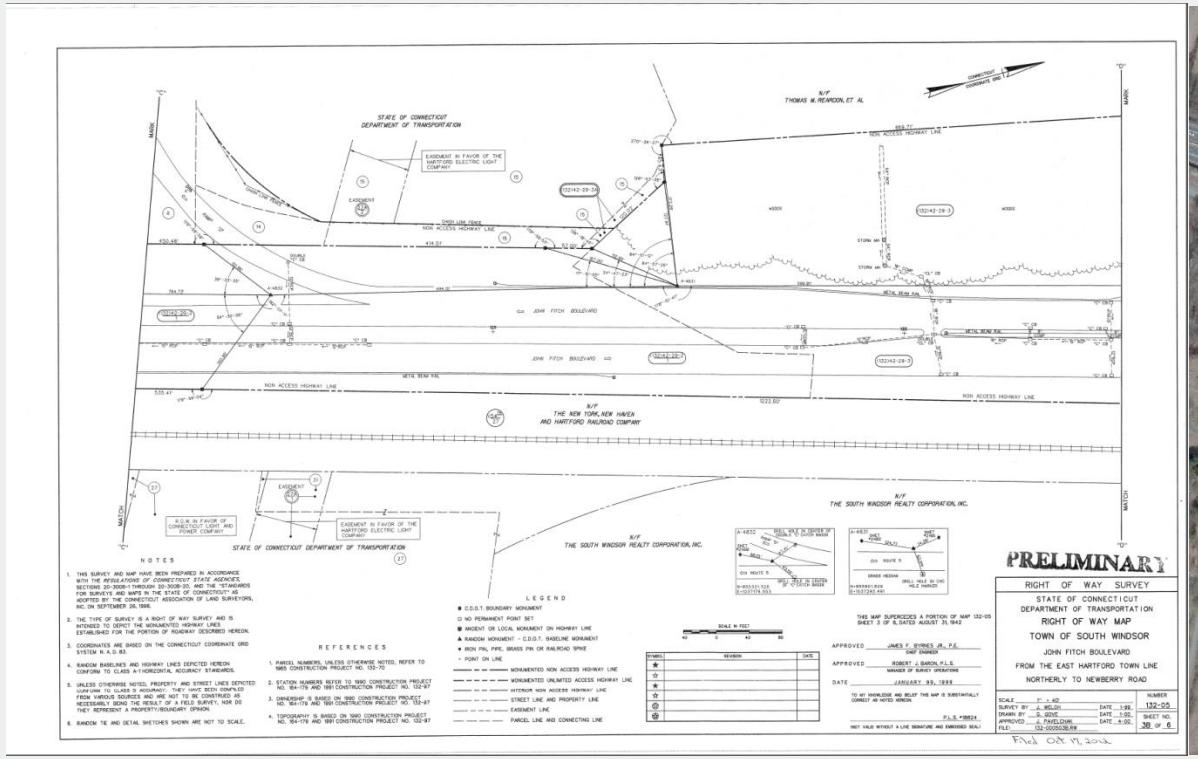
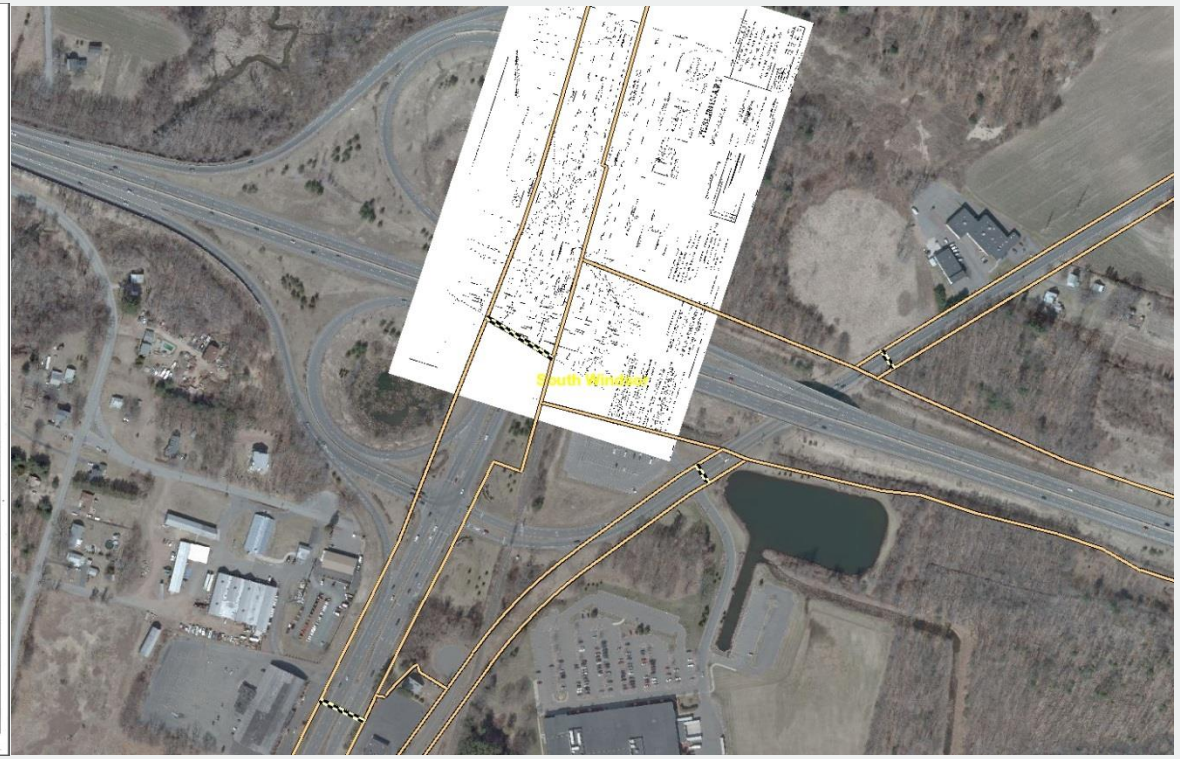
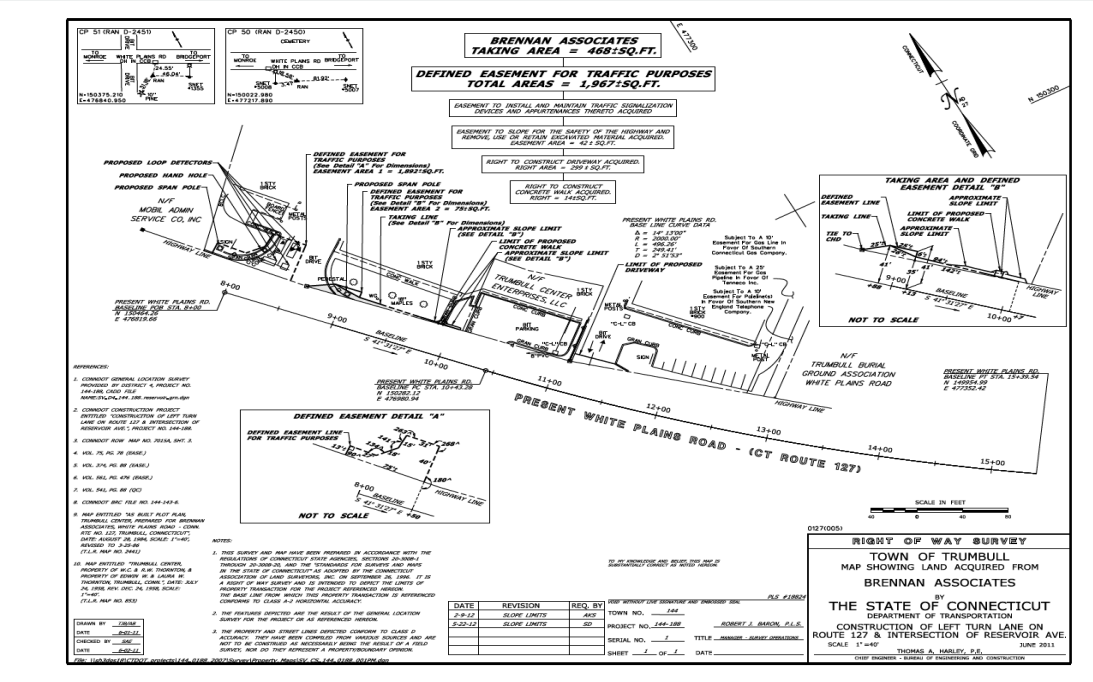
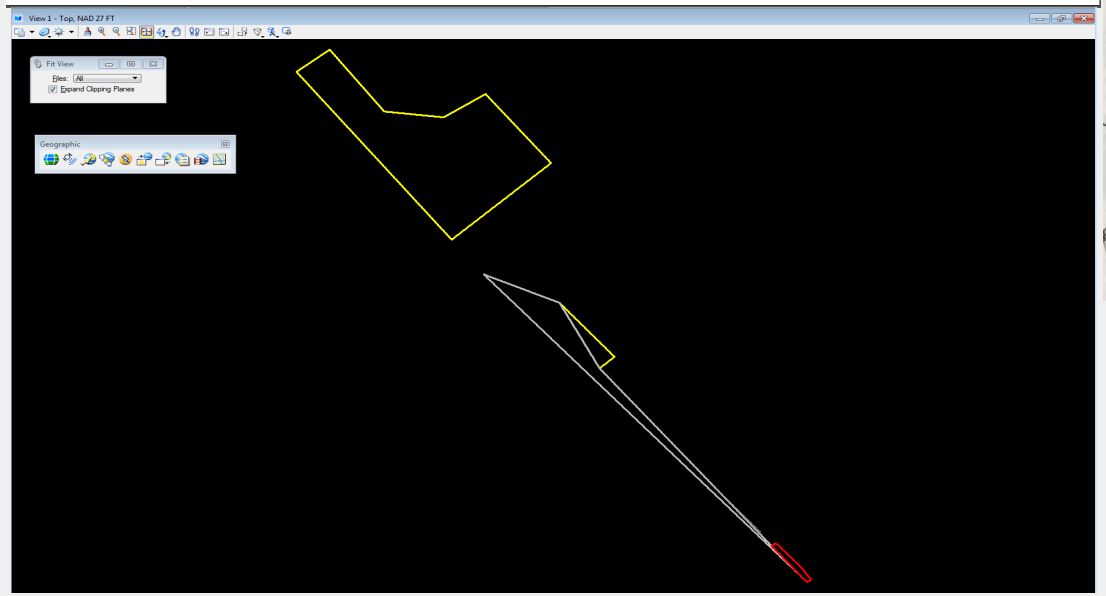
ROW Maps Scanned But Not Geo-Referenced

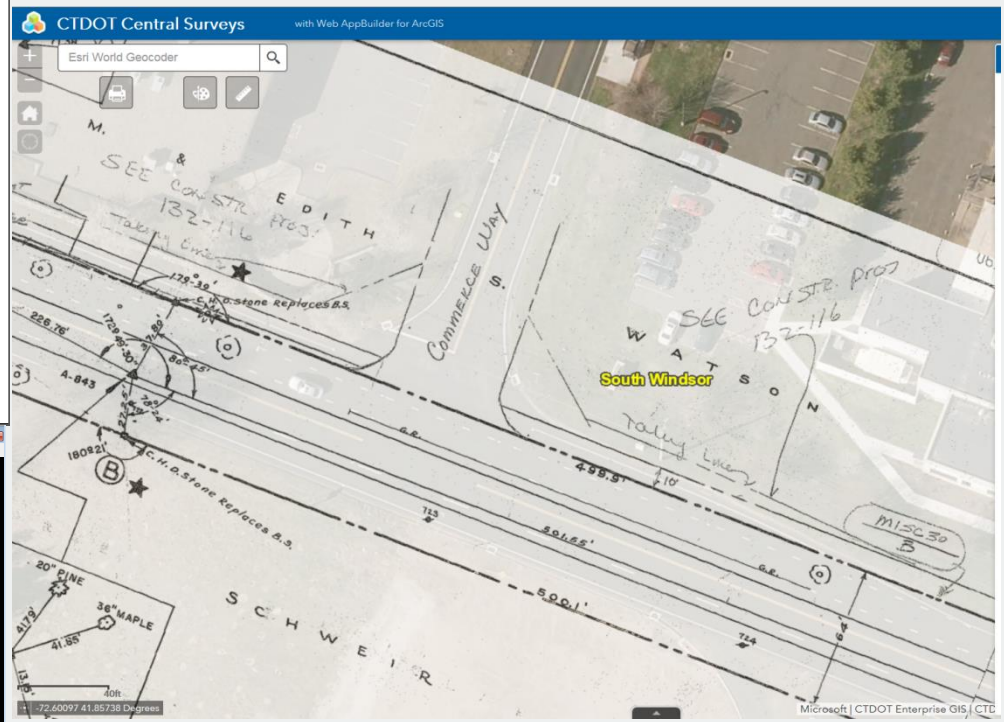




ROW Line Not Maintained







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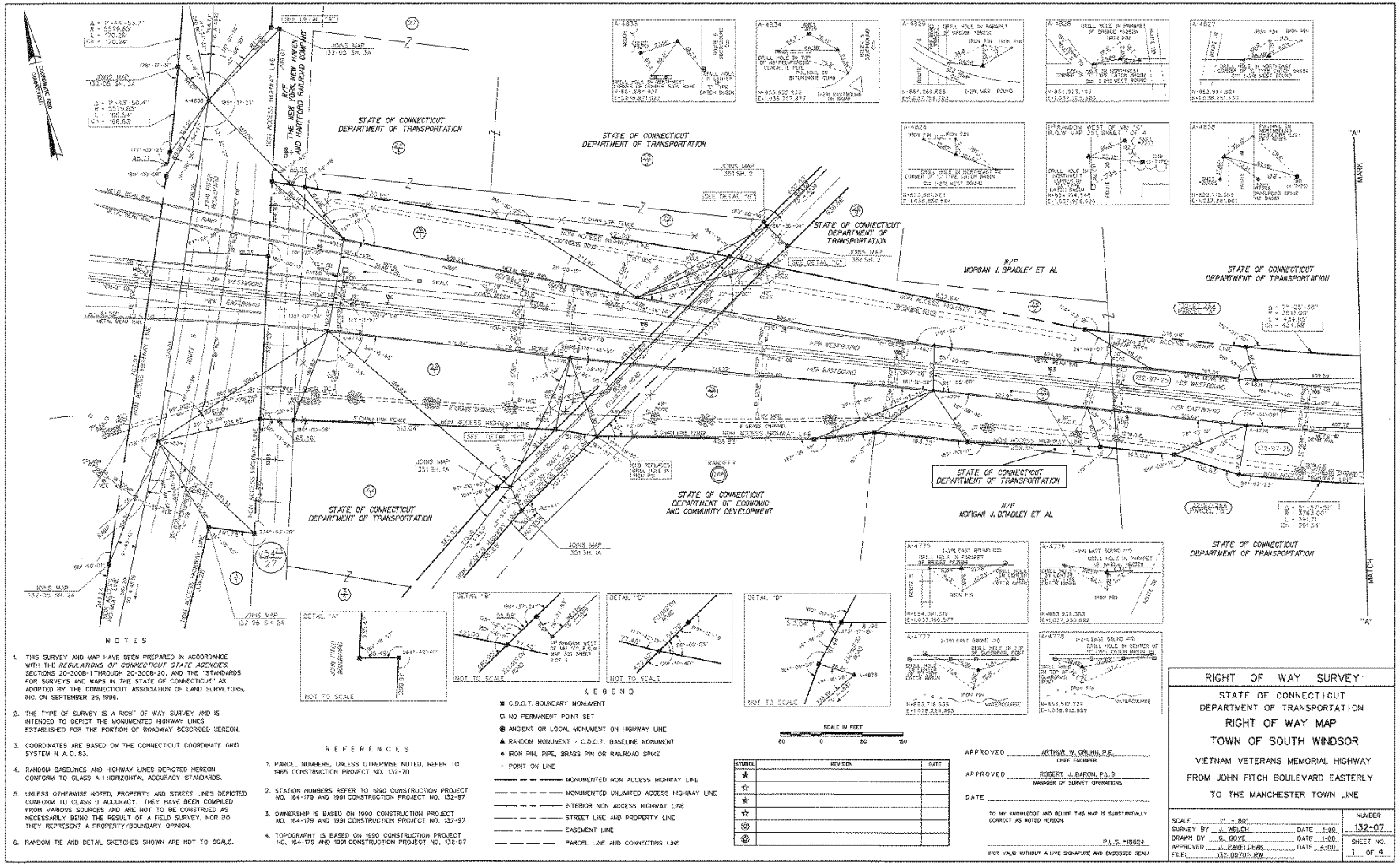
ConnDOT ROW Data Sources

- Varying Quality
  - Coordinated vs Non-Coordinated
  - Sketched in “updates”
  - Vintage
- Scanned ROW Sheets
- “Transactions”: Acquisitions and Releases

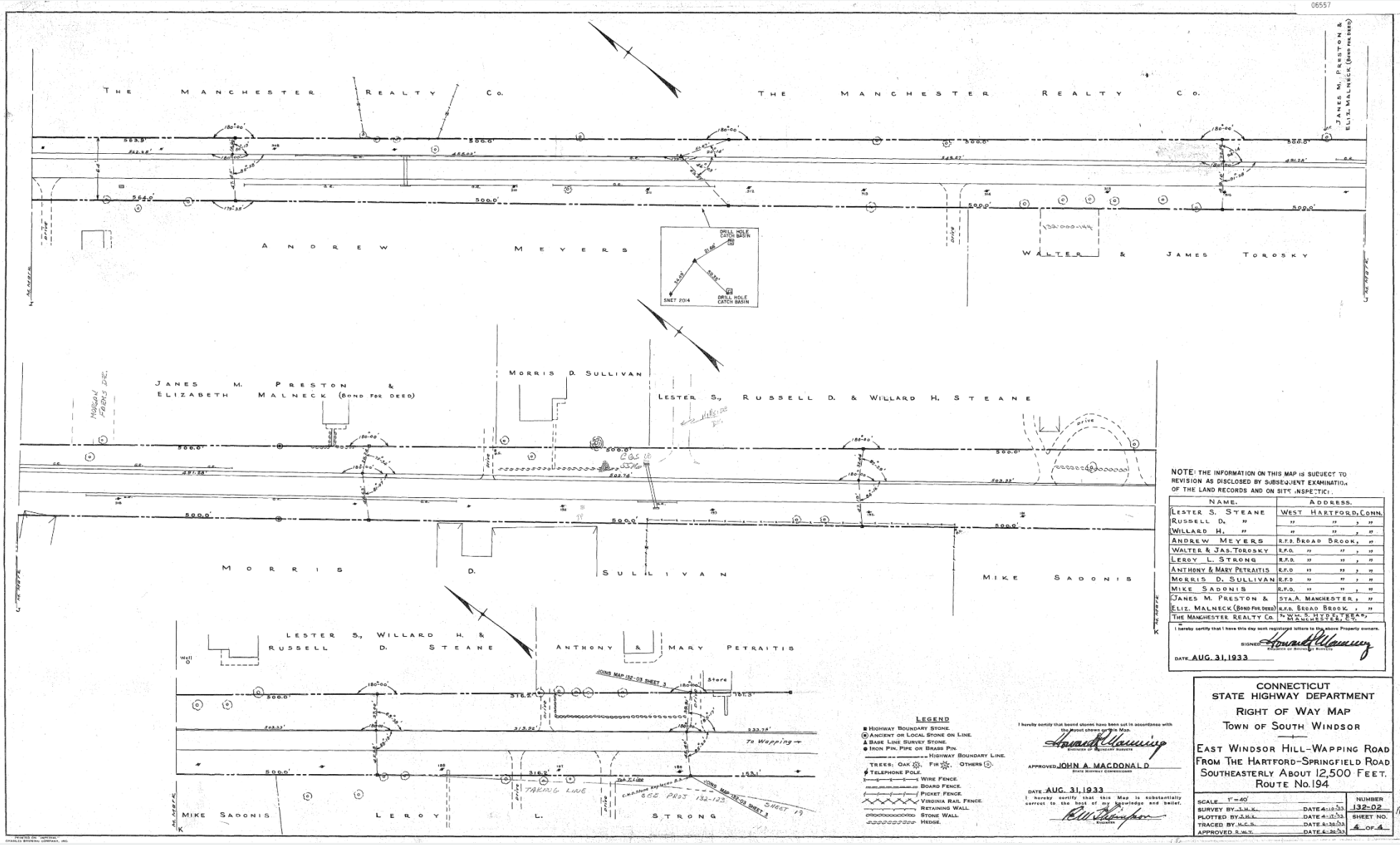
Coordinated ROW Plans

- Interstates and Highways
  - “Modern” Projects
  - NAD 27 or NAD 83
  - Relatively easy to utilize as source



Uncoordinated ROW Plans

- Other State Routes
  - Mostly 1920's/1930's
  - 2 or 3 sections per map
  - Prone to angular measurement errors
  - Somewhat challenging to utilize as source



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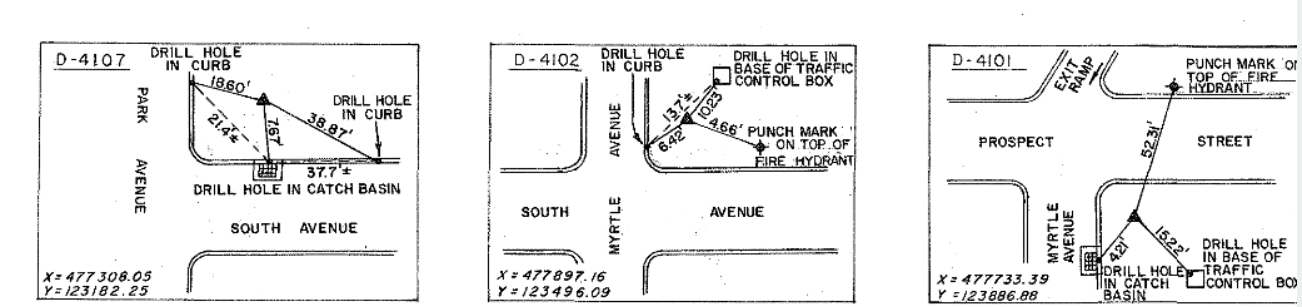
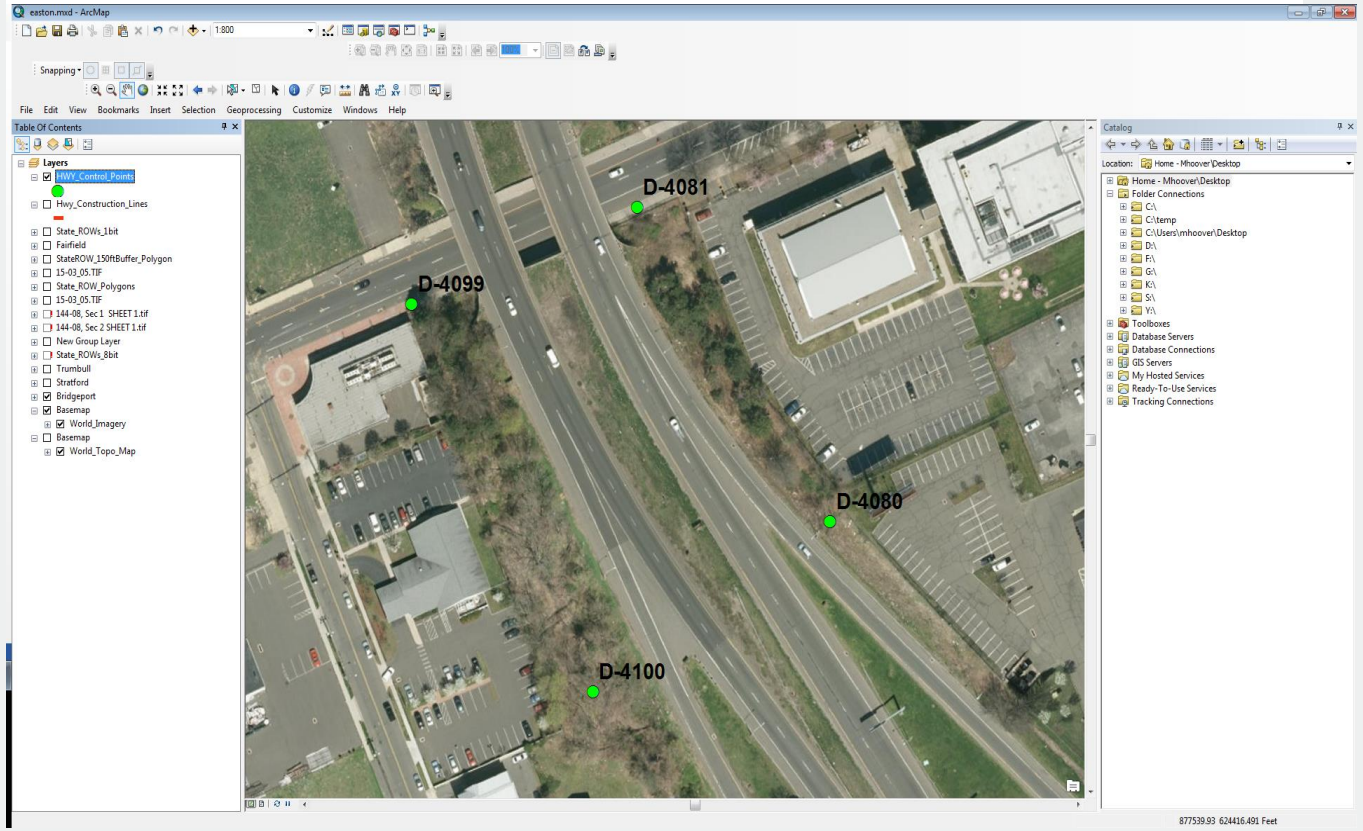
CT DOT ROW Map Mosaic Geodatabase Elements

- Survey Control Points
- Rights-of-Way Lines
- Rights-of-Way Polygons
- **Topology**
- Georeferenced ROW Maps
- Mosaic of Non-Overlapping Georeferenced Maps
- PDF Link to Source Maps

Survey Control Points

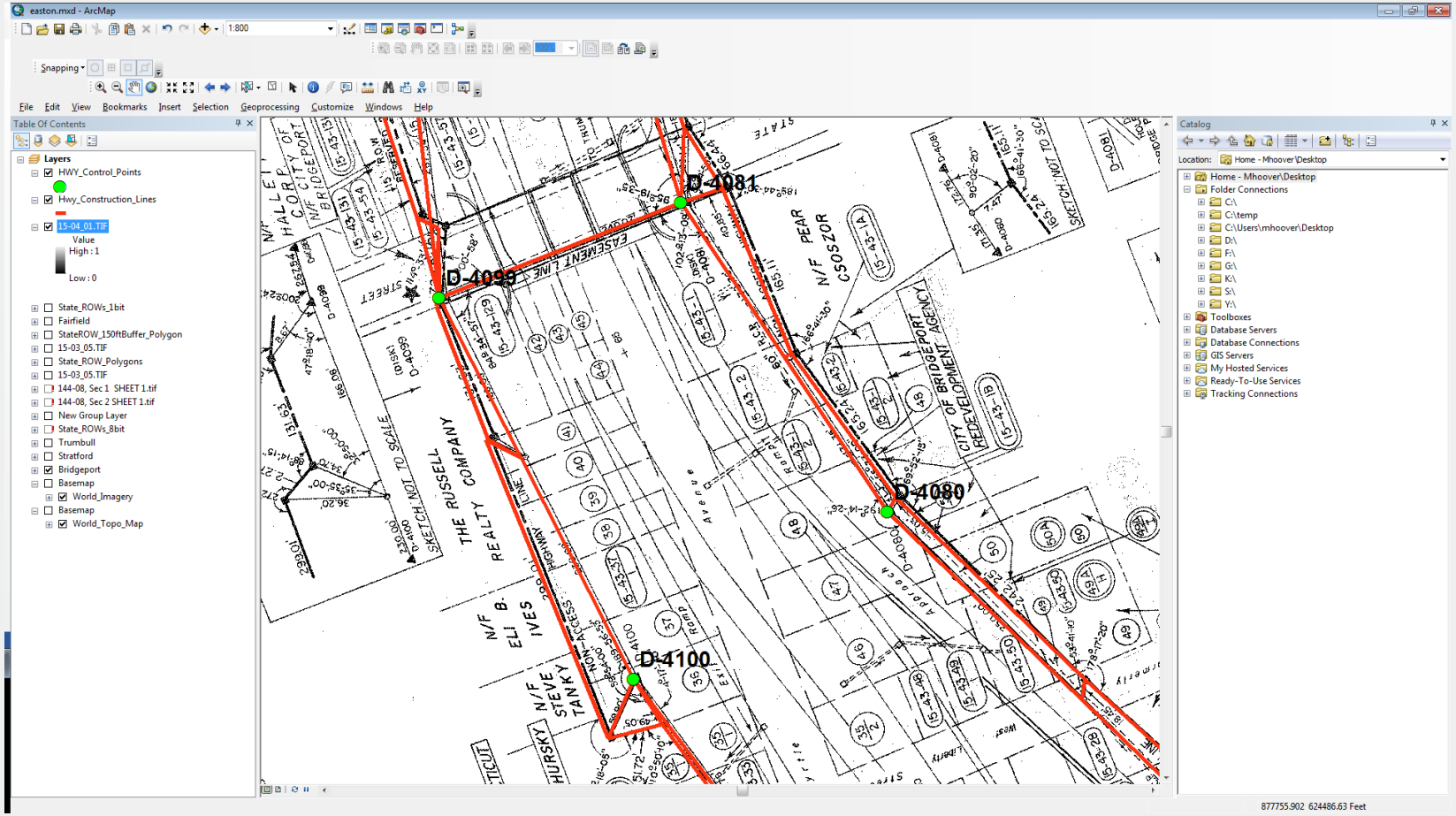
- Attribution
  - Control #
  - Map #
  - X,Y Location
- Only on Coordinated Plans
- NAD 27 transformed to NAD 83
- Field GPS work on Uncoordinated Plans
- Hyperlink to source map





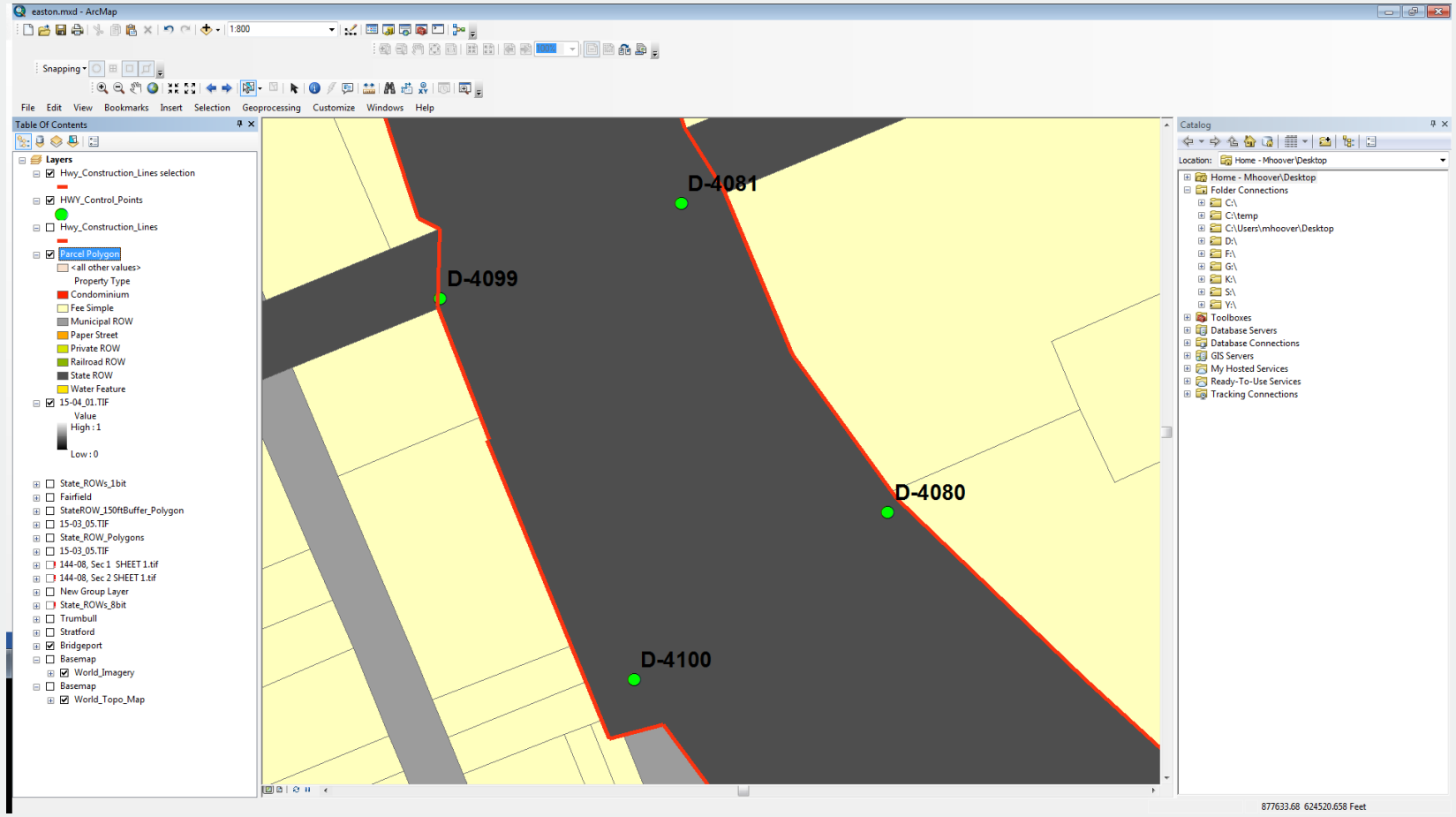
ROW Lines

- Control Lines
- ROW Boundary
- Match Lines
- Historic Lines



ROW Polygons

- Constructed from Lines
- Attribution
  - Parcel ID = project number
  - Ownership = DOT
  - Common Name = Road Name & Route
  - SourceMapID = ROW Sheet #
- Hyperlink to source map



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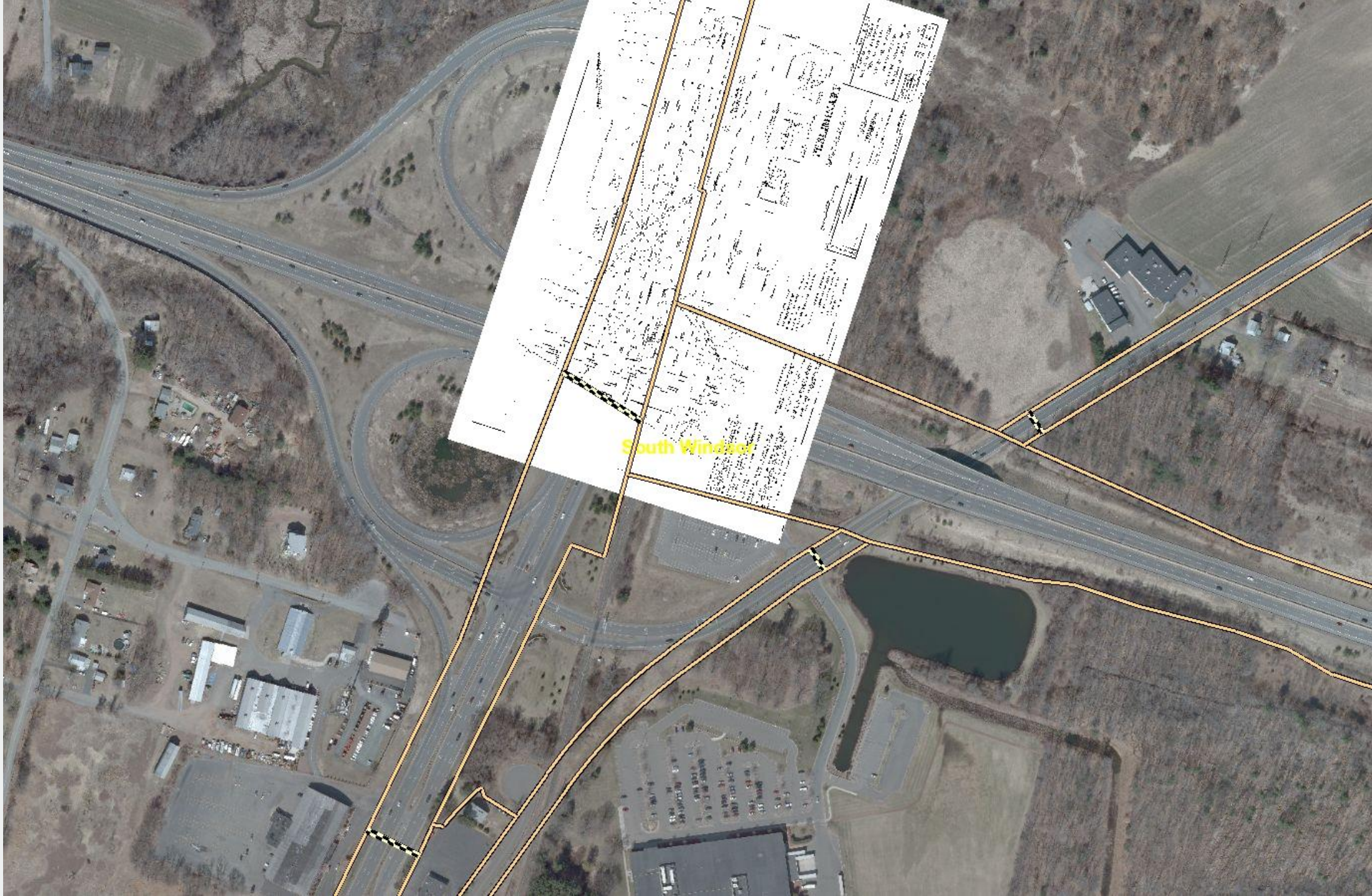
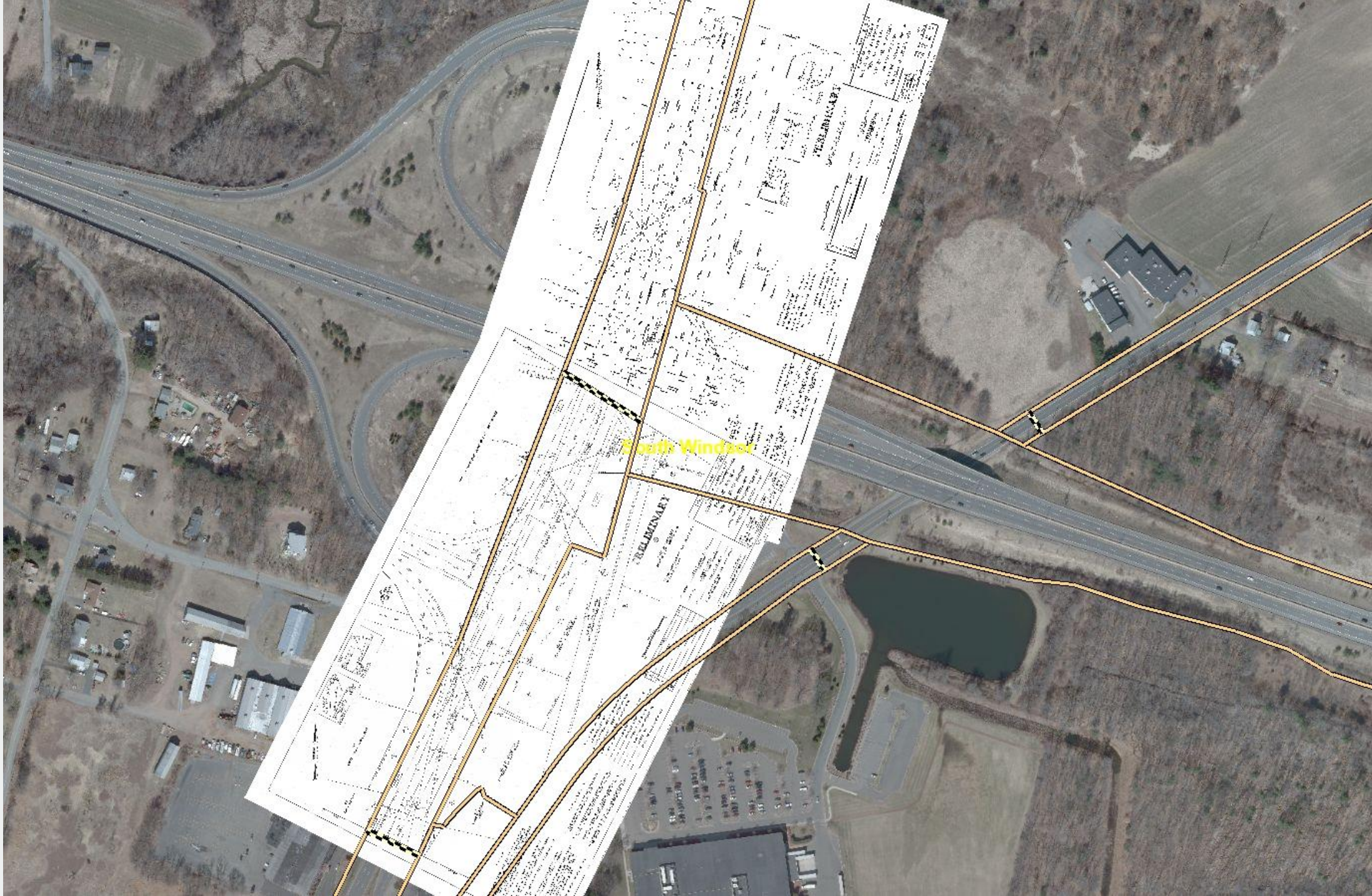
Georeferened ROW Maps

- To be added to Mosaic Dataset
- Overlaps with adjoining sheets
- Cumbersome to use as a group

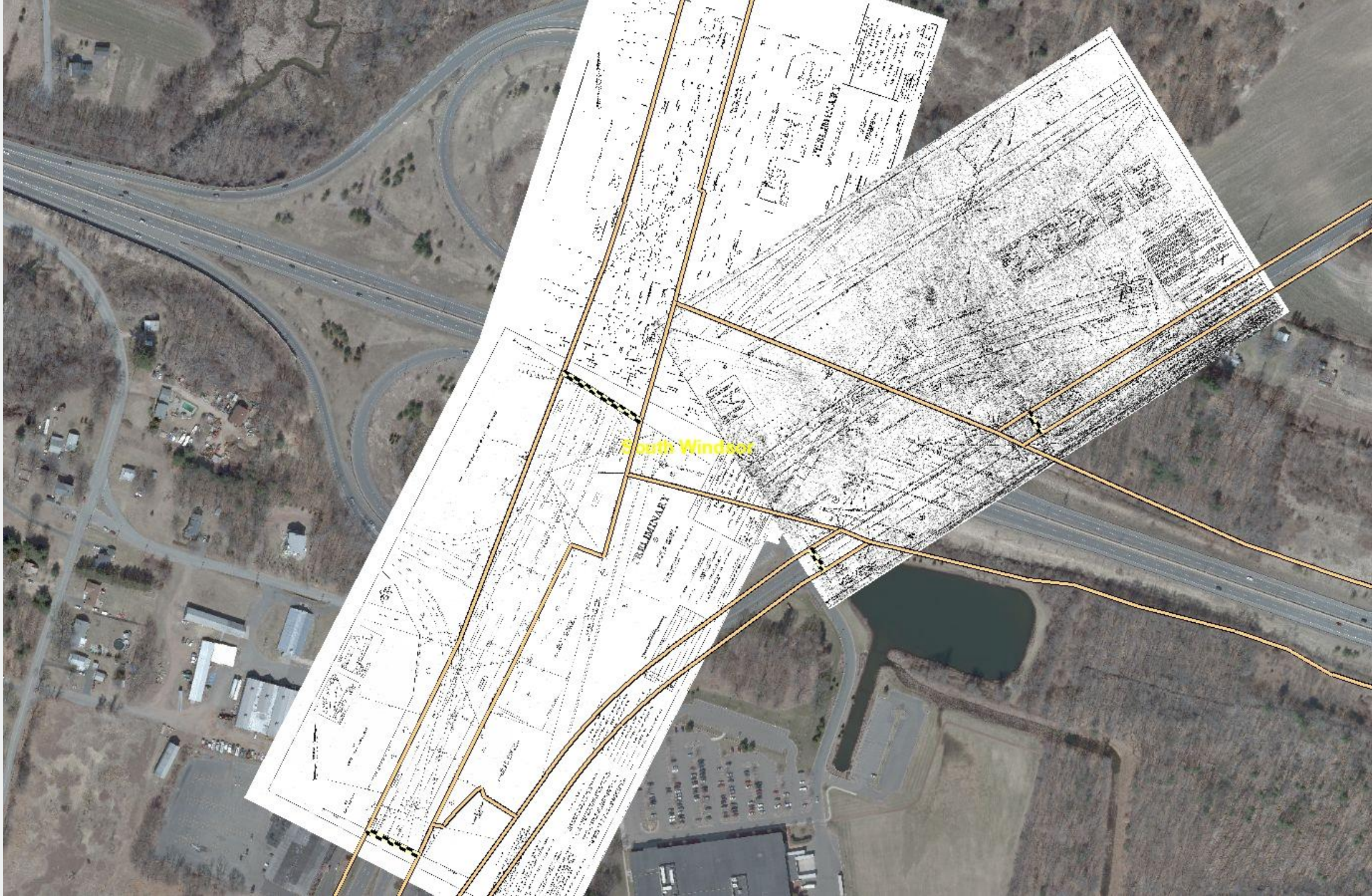
Single Map



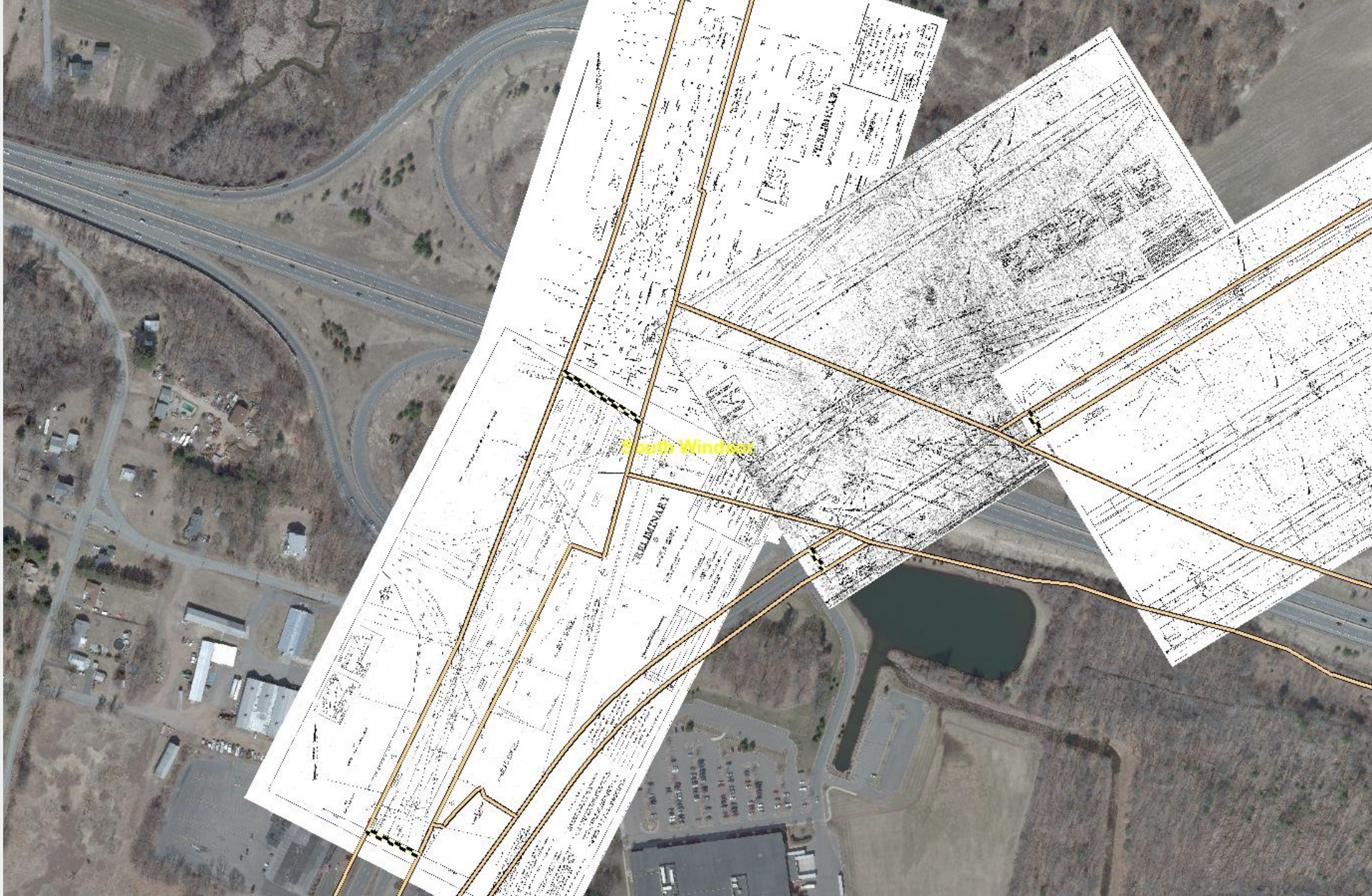
Two Maps



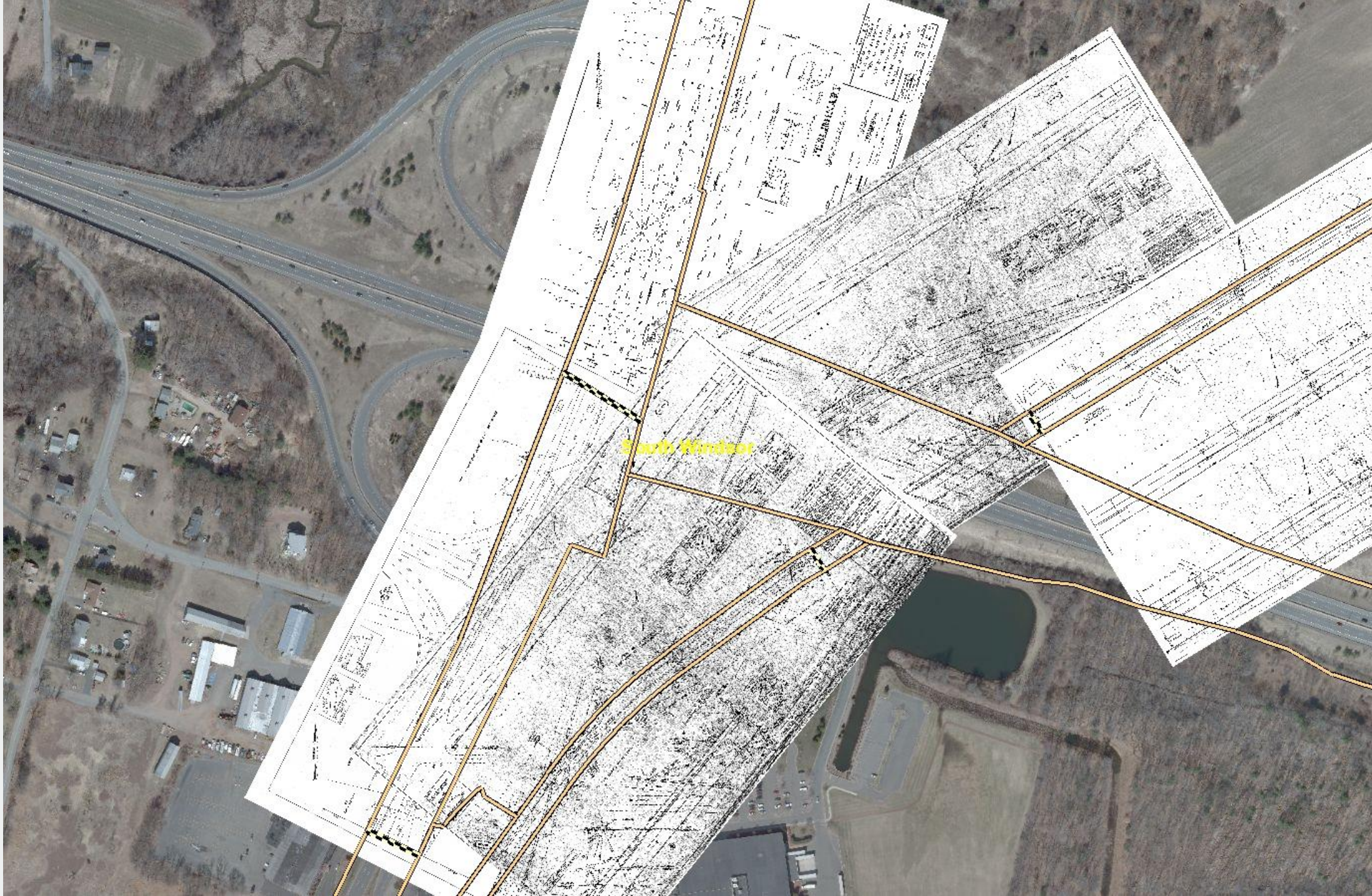
Three Maps



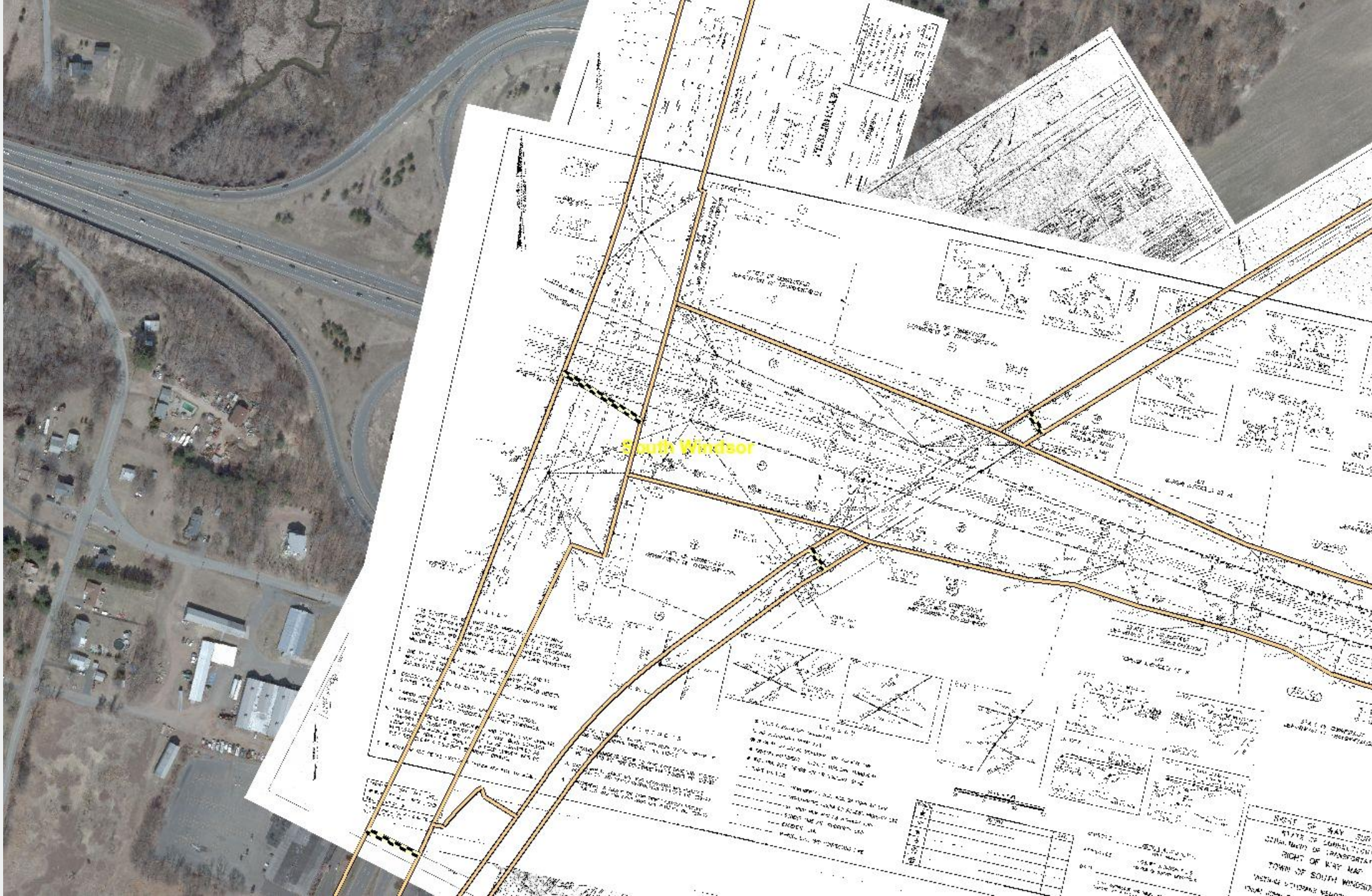
Four Maps



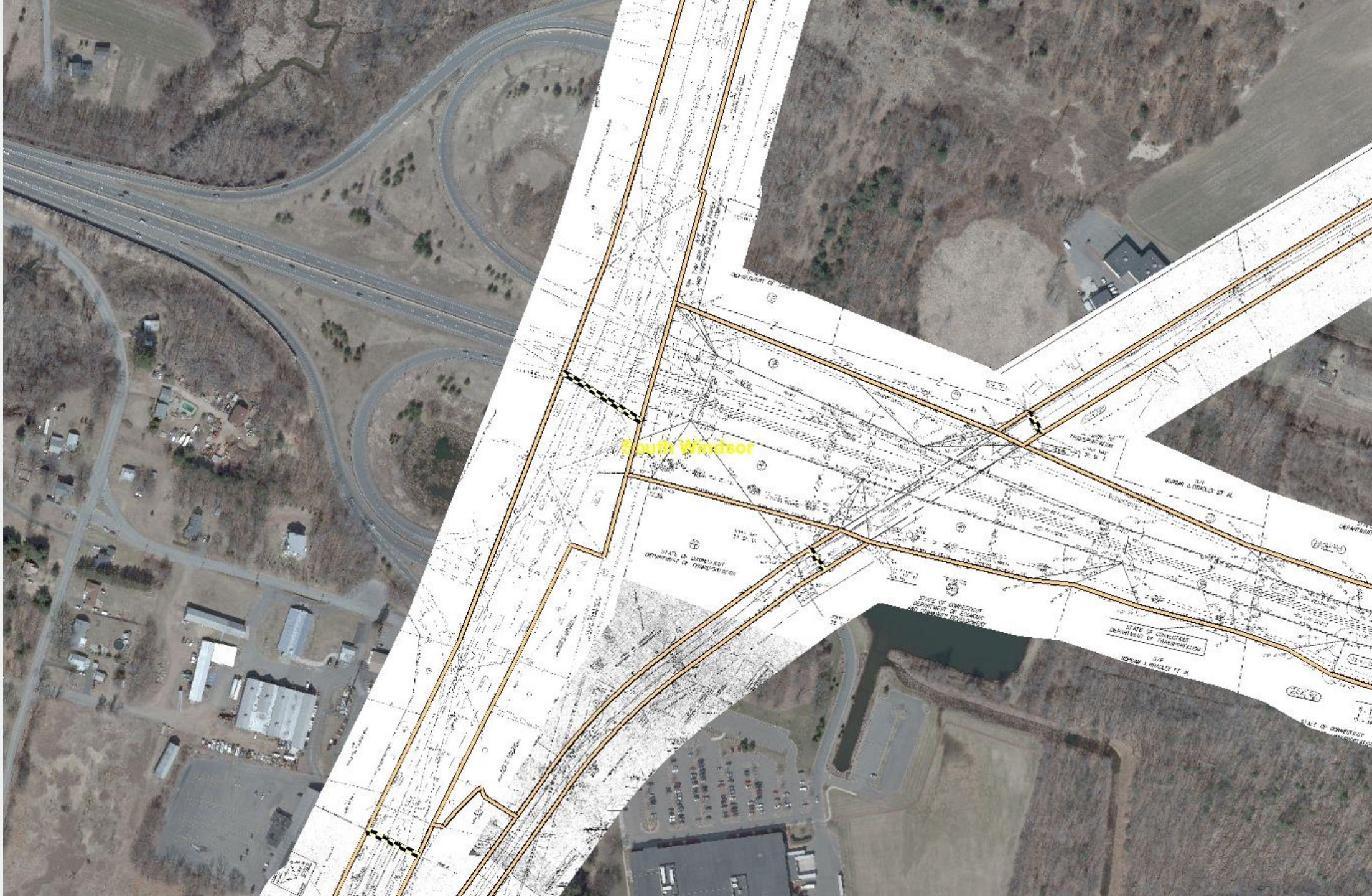
Five Maps



Confusion



Mosaic –
Ahh…Clarity



ArcGIS Mosaic Dataset

- Native ESRI Geodatabase format
  - Collection of images presented as a single image
  - Image management / catalog
  - Image property functions
  - Image geometry
    - Individual Footprints
    - Collection Boundary
- Seamless Mosaic
  - Image displayed through footprint
  - Edit footprints to create seamless appearance
  - Publish as Tile Cache

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- Demo

Next Steps:

- Central Surveys to go into production.
- ROW vector line work integration with Microstation.

Thank You!

Contact Information:

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Mark Goetz

GIS Director/MetroCog

Mgoetz@gbrct.org