

SESSION 17 | BOARD MEMBER/MANAGEMENT/LEGAL

BERKS COUNTY WATER AND SEWER ASSOCIATION
VIRTUAL CONFERENCE | JULY 29, 2020

DO YOU HAVE YOUR ASSETS IN THE CLOUD?
ALFRED GUISEPPE, PG



SPOTTS | STEVENS | MCCOY
Engineering, Surveying and Environmental Services
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What we're exploring today!

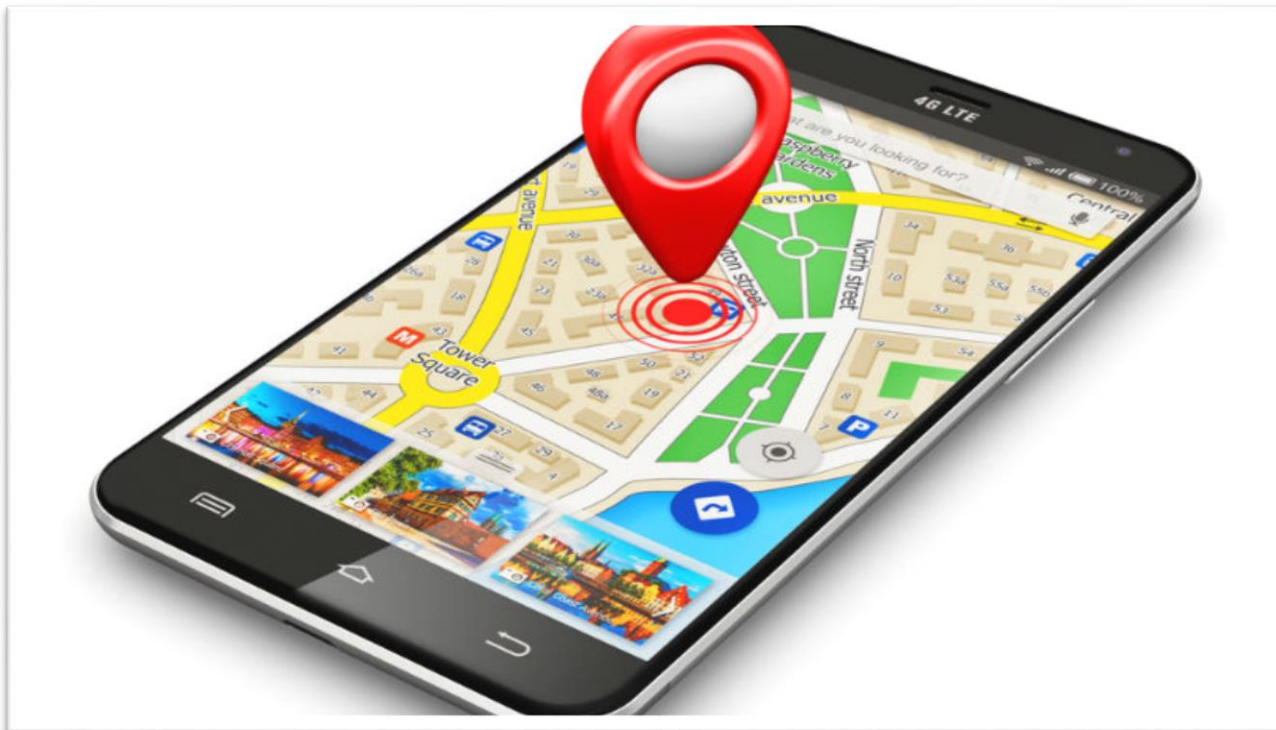
- Online data for a digital world
 - Making data accessible to operations staff
- Collaborative data exchange
 - Connecting those who know with those who manage
- Mobile database population
 - Capturing institutional knowledge



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The Brave New GIS World

- Thanks to Google, we are all GIS users now.
- Web-based GIS applications have provided new means to create, store, and access GIS data.



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Digitizing Historic Plans

- Converting as-built plans to GIS
- Paper maps are scanned to an image file
- Real-world coordinates assigned through a process called **georeferencing**



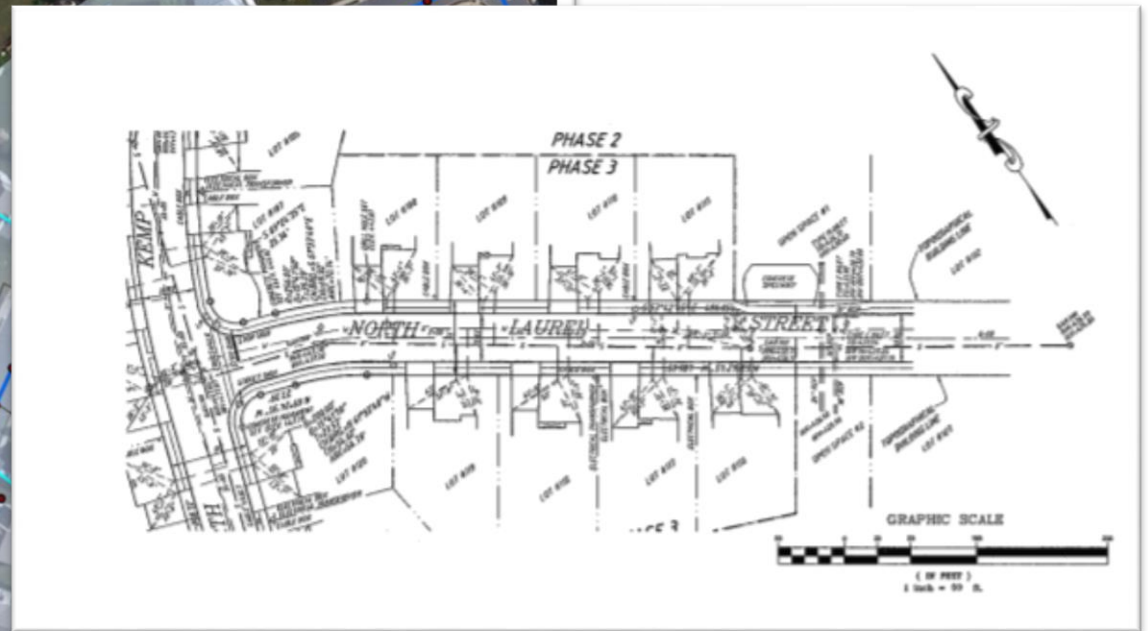
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Digitizing Historic Plans



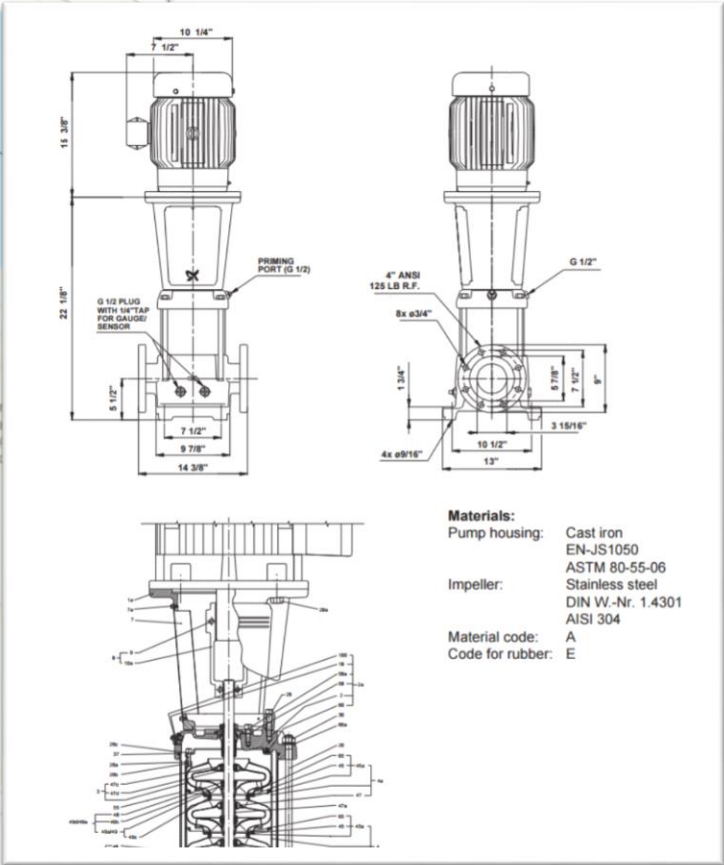
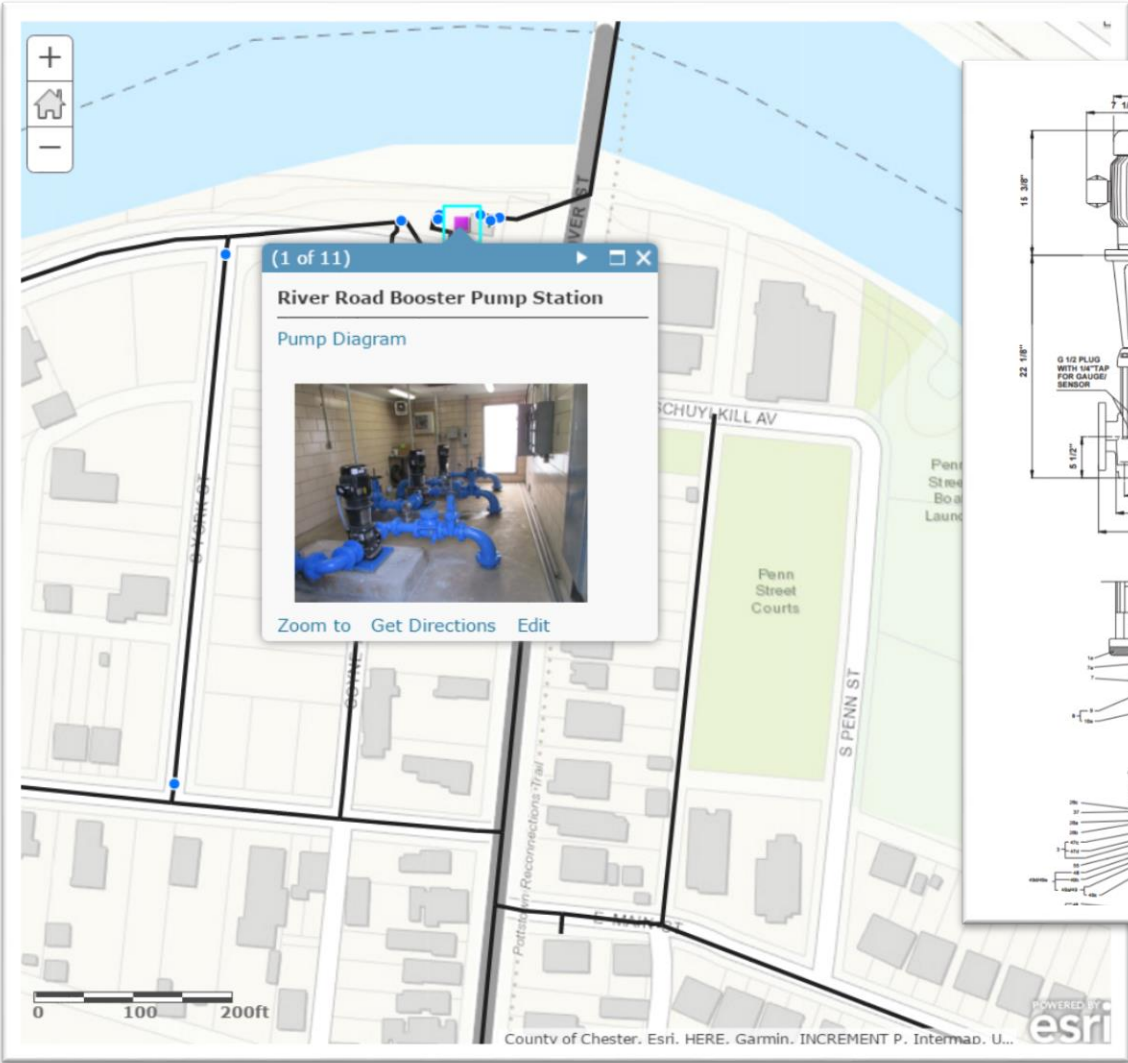
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Record Management System



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Record Management System



Materials:
Pump housing: Cast iron
EN-JS1050
ASTM 80-55-06
Impeller: Stainless steel
DIN W.-Nr. 1.4301
AISI 304
Material code: A
Code for rubber: E



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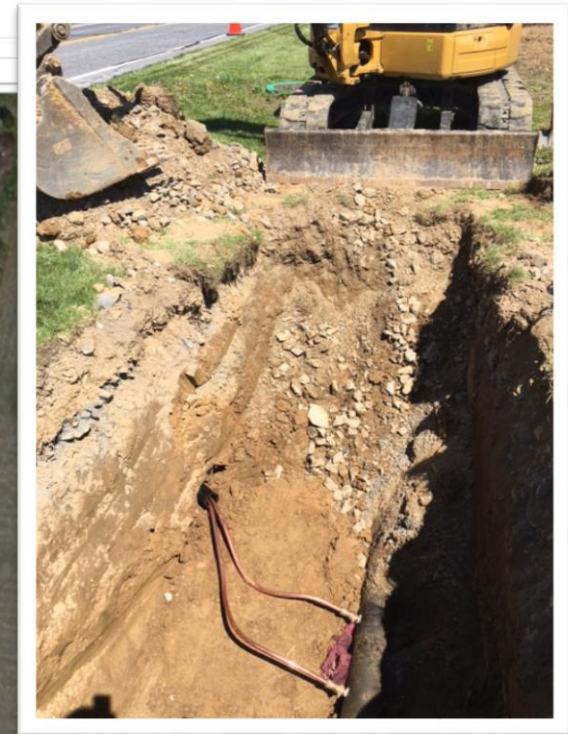
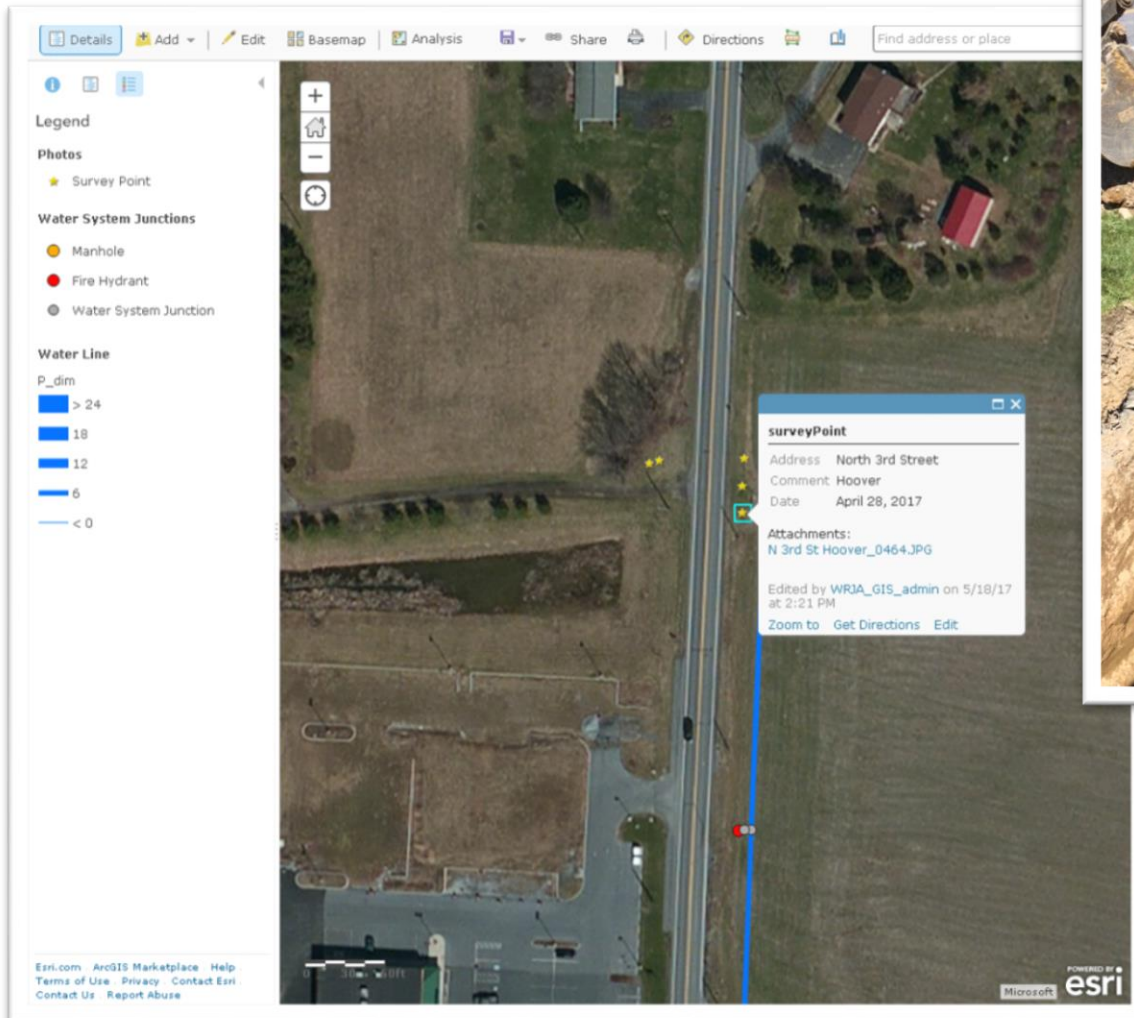
Collaborative Data Exchange

- Cloud based GIS services allow seamless communications between field personnel and office managers & consultants



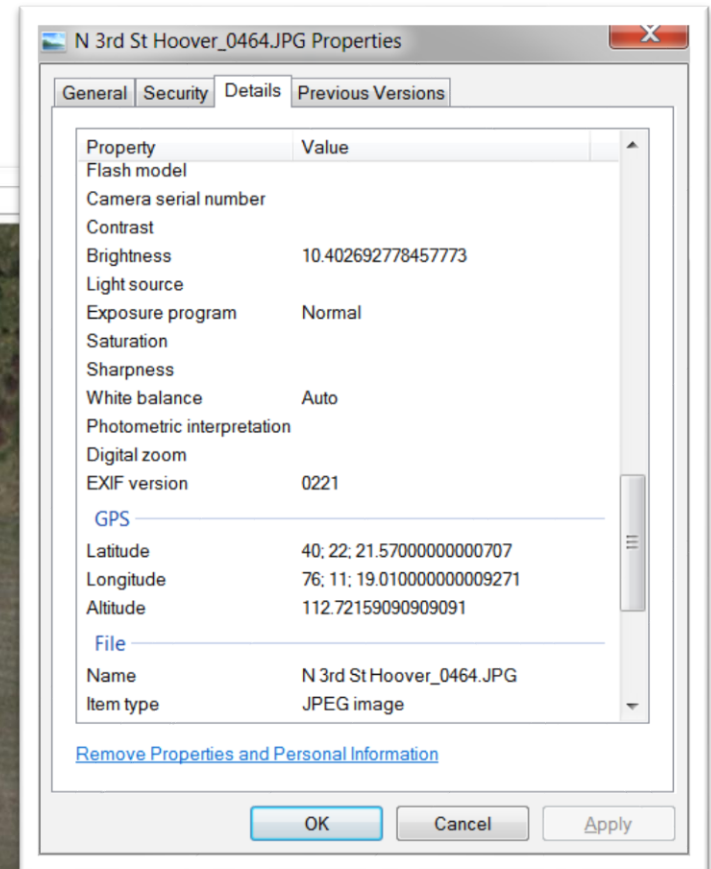
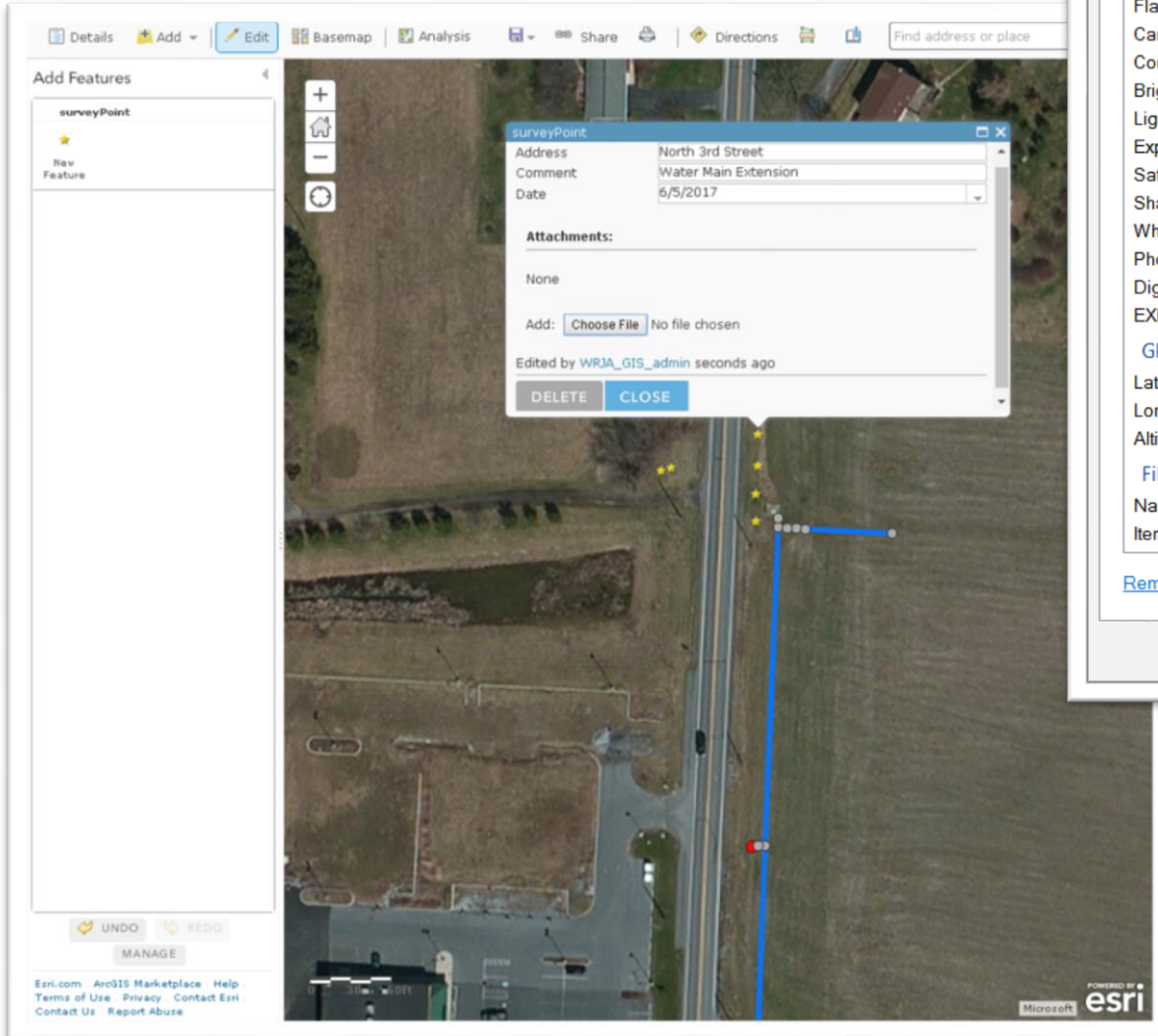
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Document Field Photos



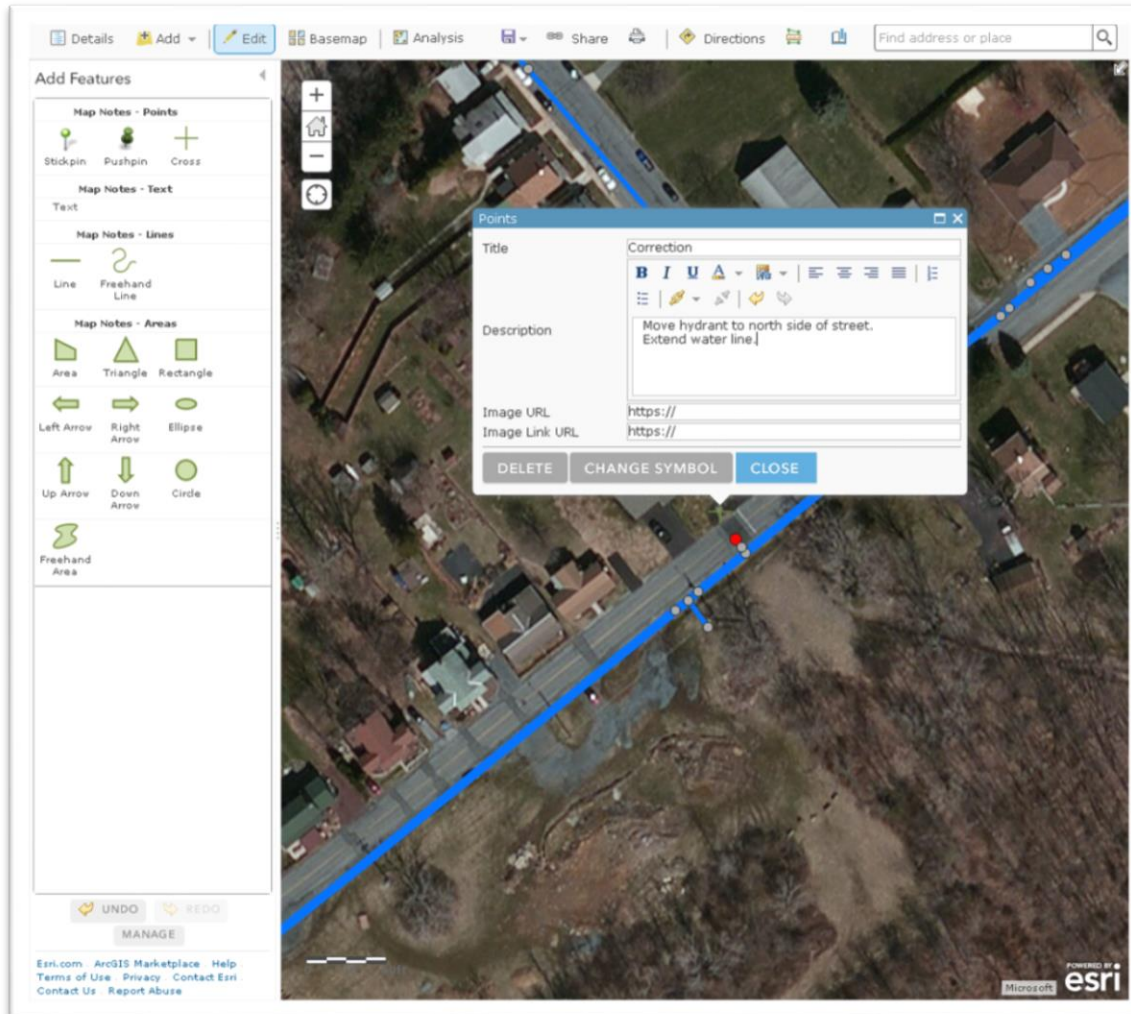
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Document Field Photos



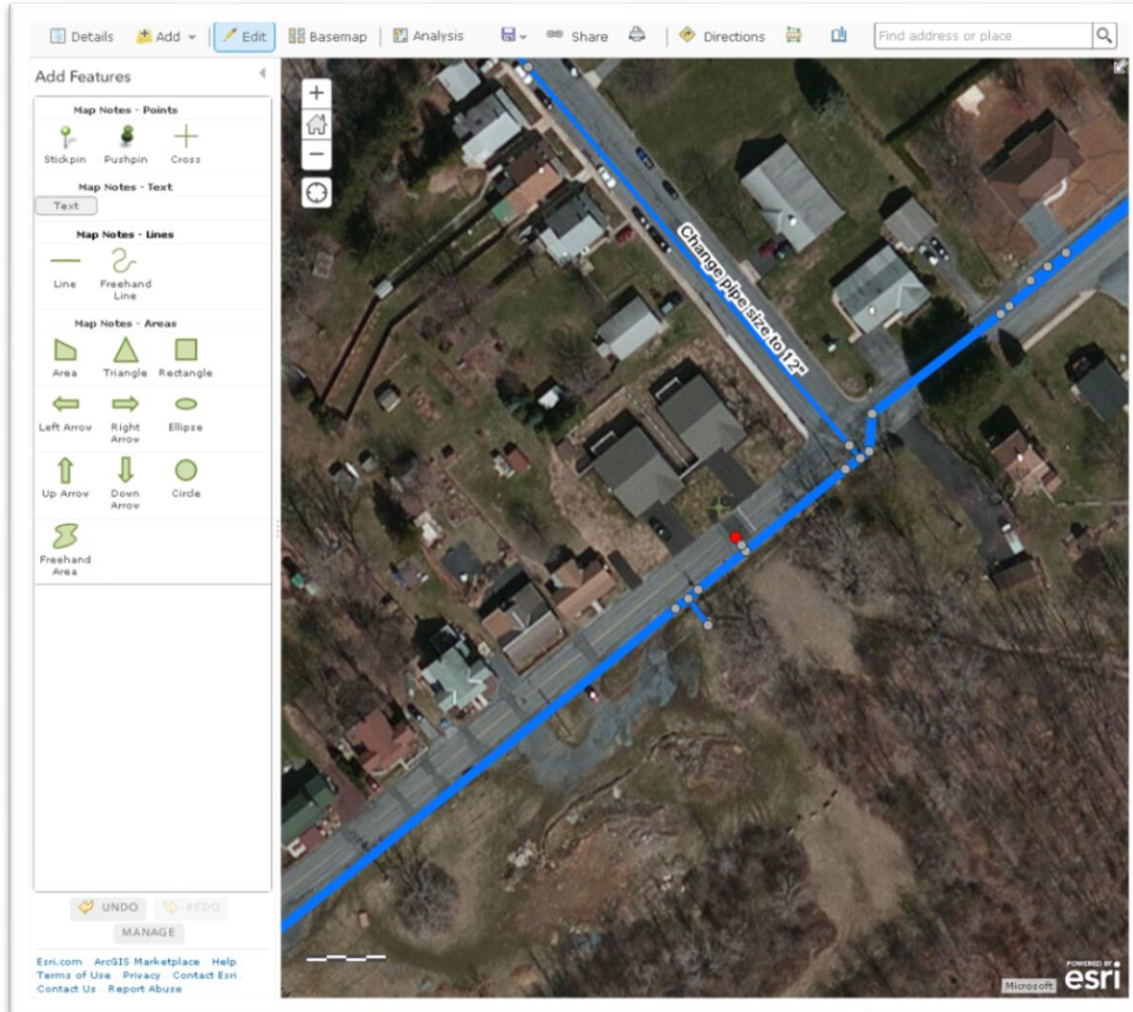
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Field Corrections



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Field Corrections



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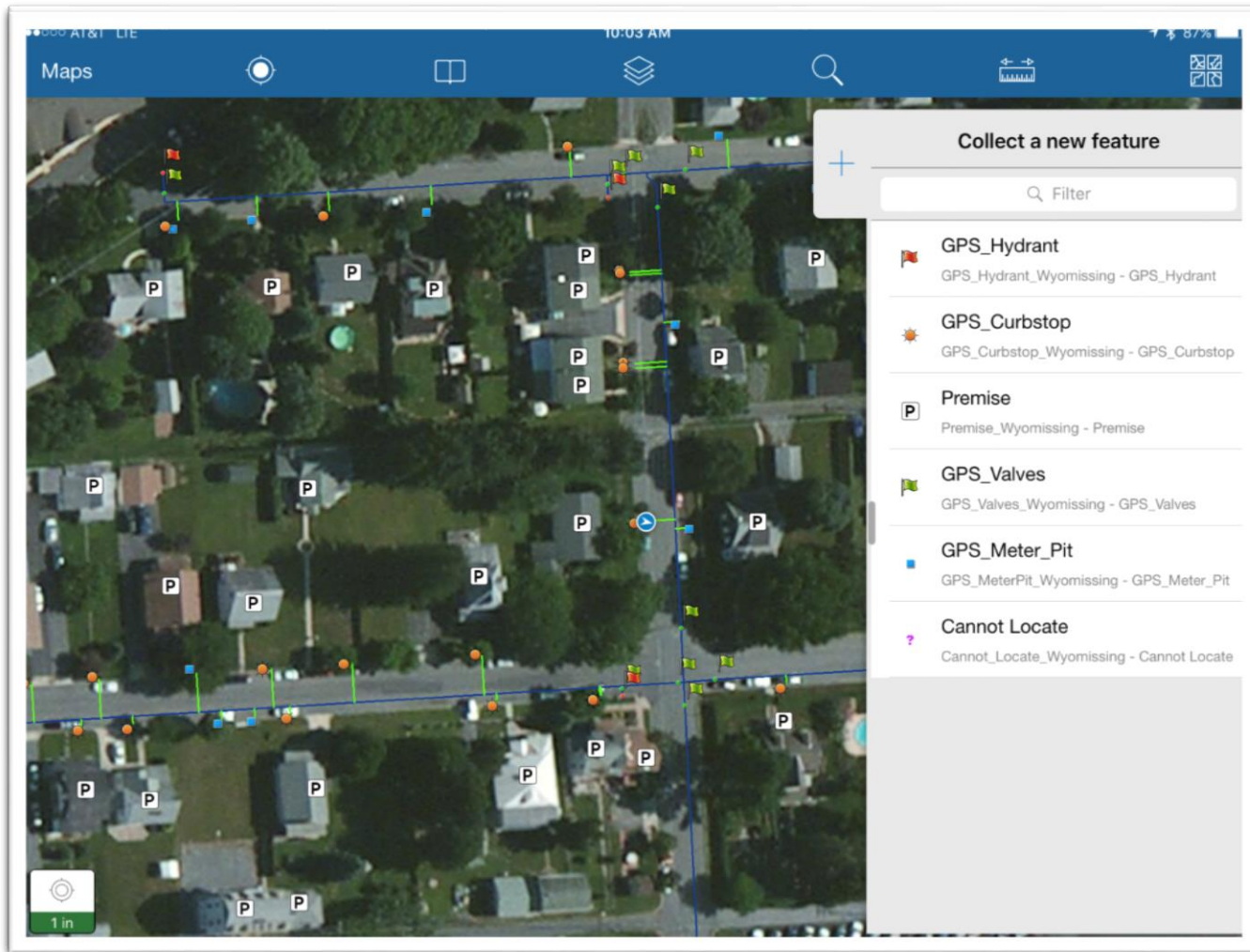
Field Data Collection

- Mobile device (phone or tablet)
 - iPad
- RTK (Real Time Kinematic) Receiver
 - Eos Arrow 200(1 cm accuracy)
- Mobile app
 - ESRI's Collector



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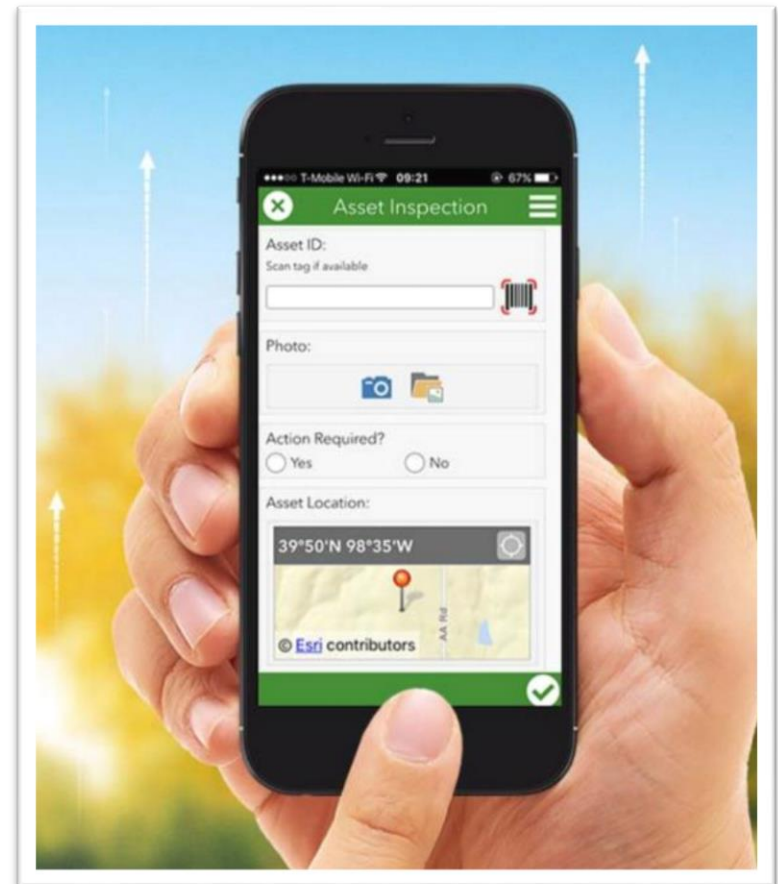
Field Data Collection



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Database Population

- Field personnel can add attribute data to GIS database
 - Attribute tables in web maps
 - In the field or in the office
 - Form-based survey applications
 - Survey123 for ArcGIS



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Database Population

The screenshot displays an ArcGIS web application interface. The top navigation bar includes 'Details', 'Add', 'Edit', 'Basemap', 'Analysis', and a search bar labeled 'Find address or place'. The left sidebar contains a 'Legend' with categories: 'Water Valve' (blue dot), 'Meter Pit' (yellow dot), 'Fire Hydrant' (red cross), and 'Water Main' (orange line). The main map area shows an aerial view with these assets overlaid. A pop-up window for a selected 'Water Valve' shows 'Valve Number: 26' and options to 'Zoom to', 'Get Directions', and 'Edit'. Below the map is a table titled 'Water Valve (140 features, 1 selected)' with columns: BOX, JOBNO, FHNOSHEET, SIZEMAIN, and OPENS. The first row of data is highlighted in blue.

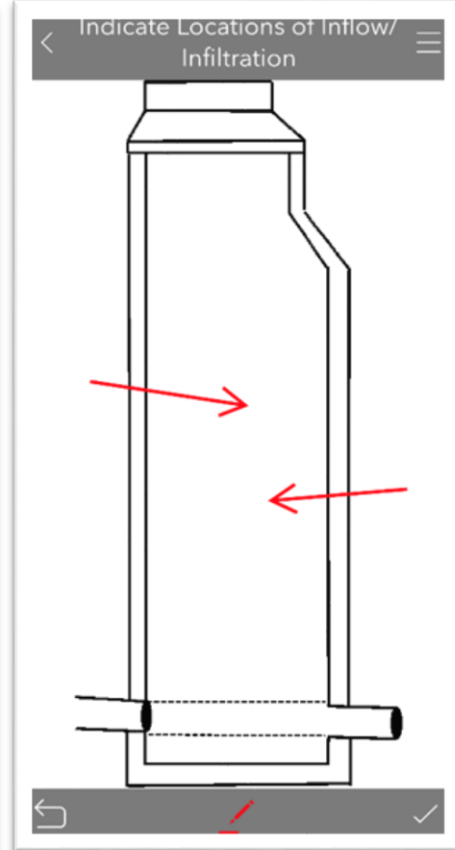
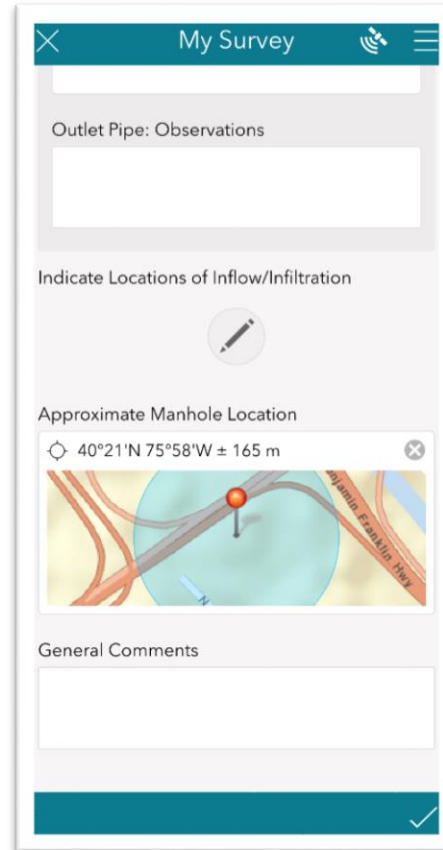
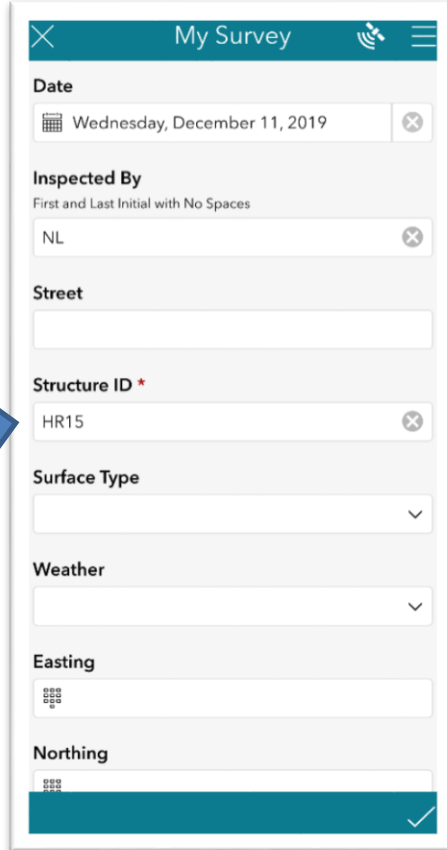
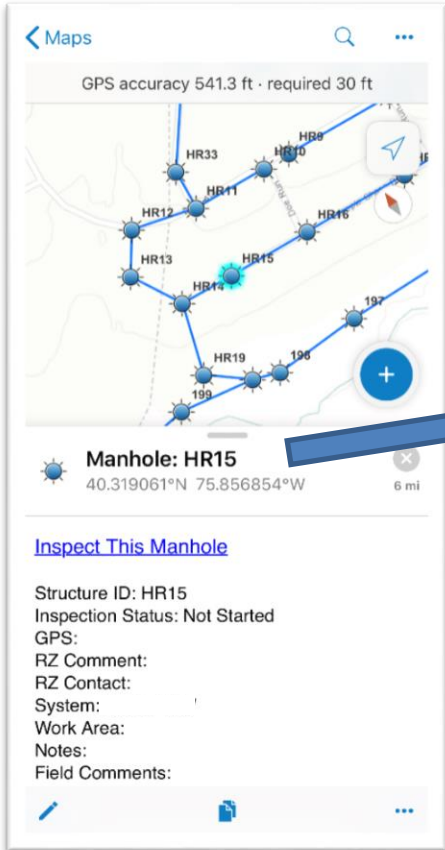
| BOX | JOBNO | FHNOSHEET | SIZEMAIN | OPENS |
|-----|-------|-----------|----------|-------|
| 115 | | 0 | | |
| | | 0 | | |
| | | 0 | | |
| | | 0 | | |

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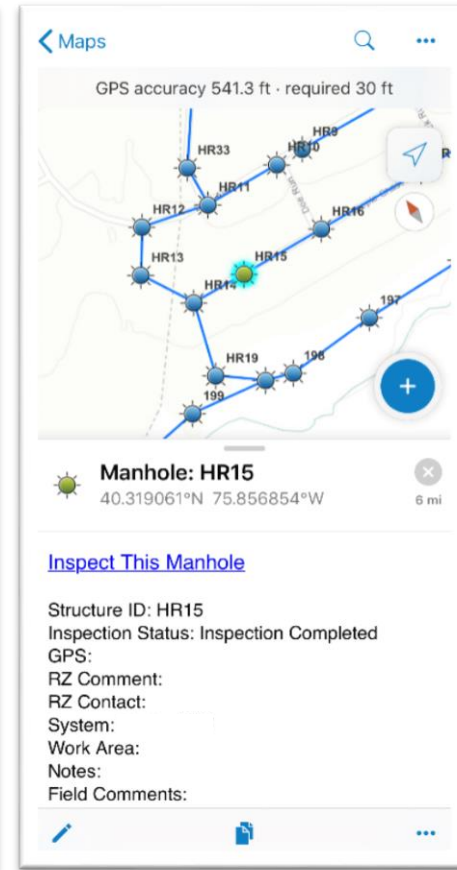
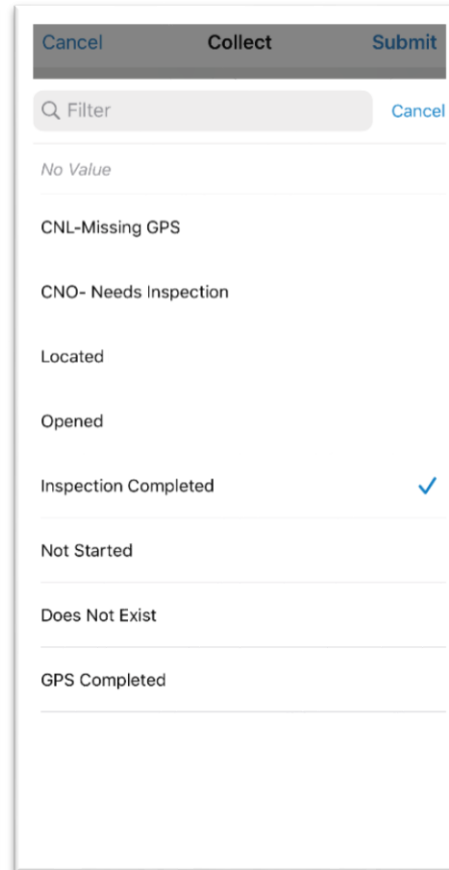
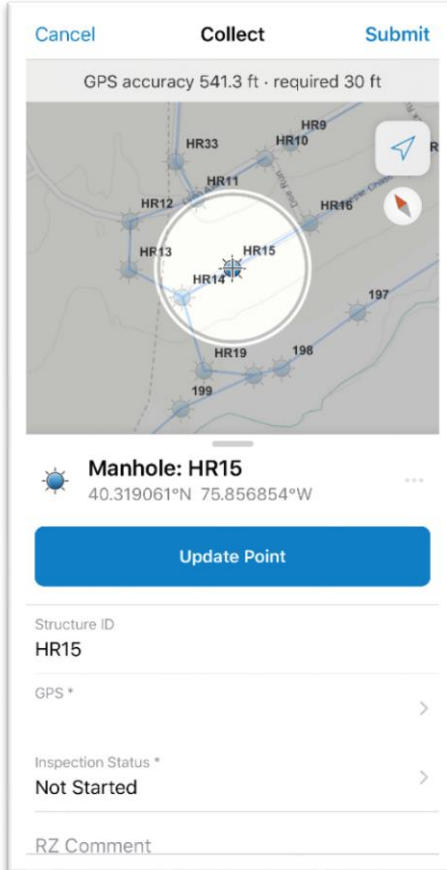
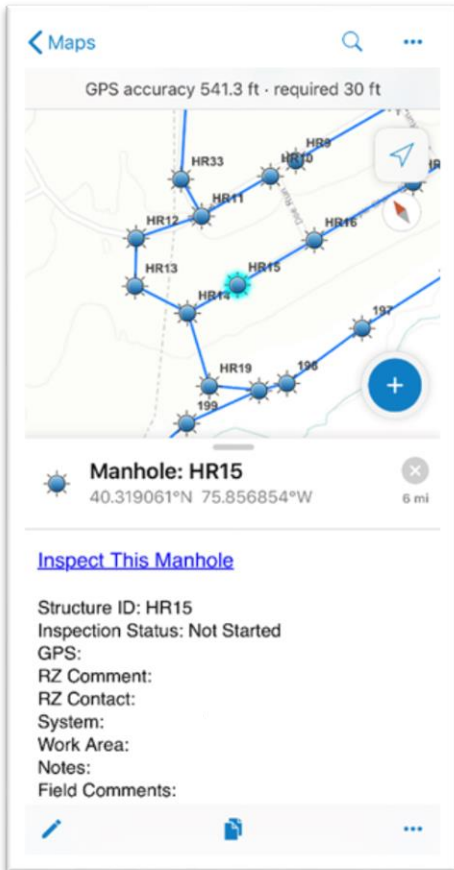
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Manhole Inspection Survey



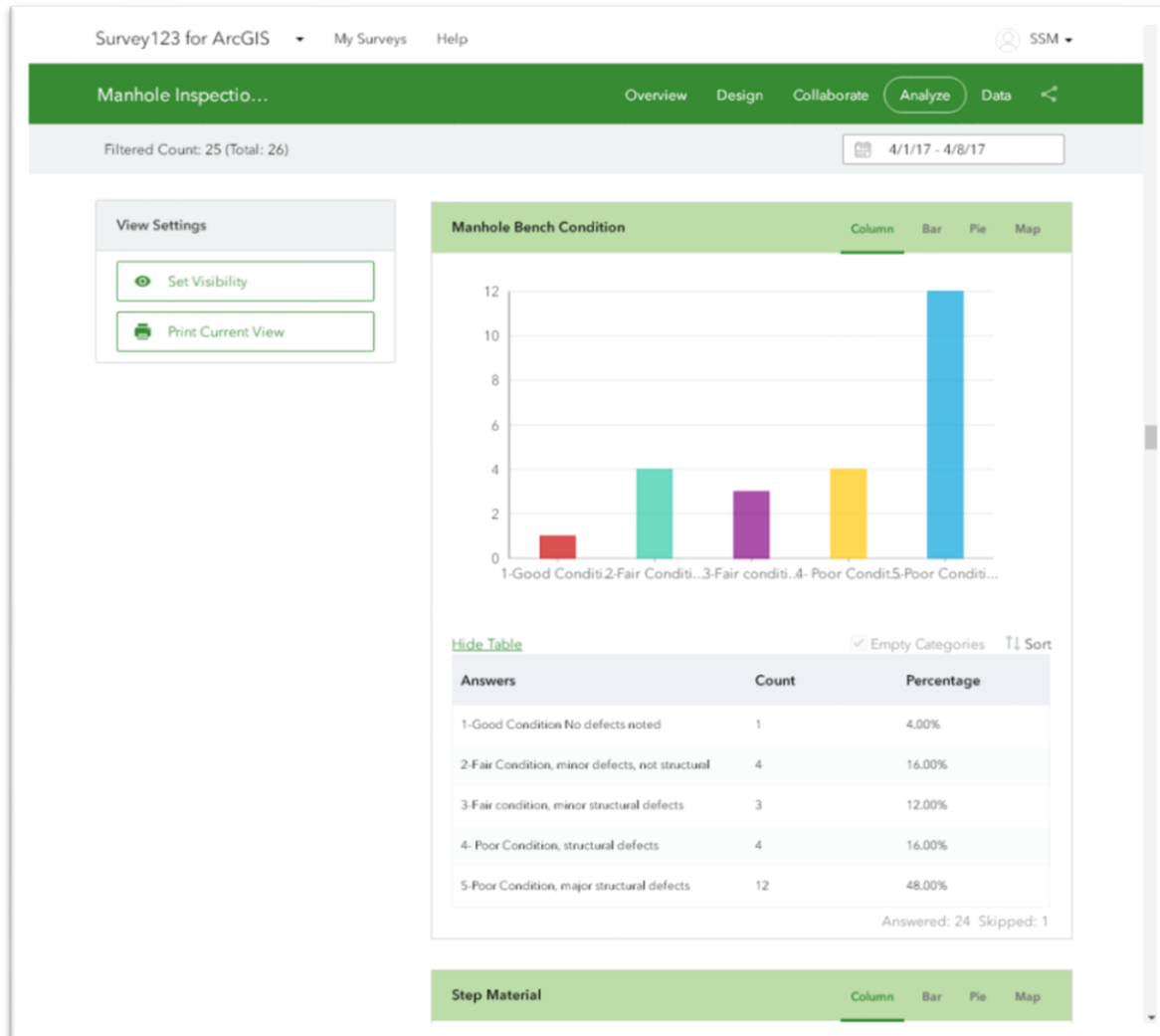
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Manhole Inspection Survey



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Real Time Analysis



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Sewer Manhole Inspection Reports

Spotts, Stevens and McCoy
Manhole Inspection Form (Level 1)

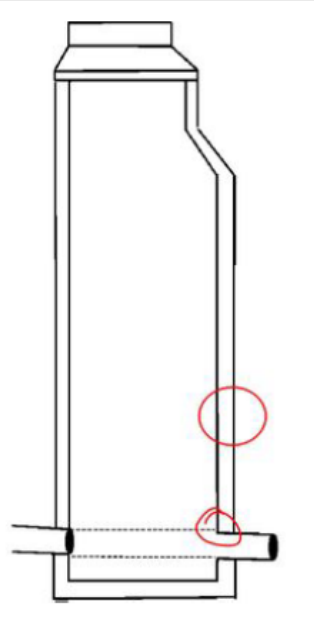
| | | | |
|----------------|-------------|---------------|--------------|
| Client: | | Date: | 11/20/2019 |
| WO #: | 109963 | Inspected By: | NL |
| Street: | Winding Way | Manhole No.: | MS3 |
| Rim to Grade: | 0 | Surface Type: | Road |
| Rim to Invert: | 7.9 | Weather: | Clear, sunny |

Comments

| | | |
|-------------------|------------------|--------------------------|
| Cover Dia. (ft) | 2.15 | |
| Cover Condition | 2 | |
| Adjustment Ring | No | |
| Ring Condition | | |
| Inside Frame Dia. | 2.15 | |
| Frame Condition | 2 | |
| Surface Seal | 5 | |
| Rain Shield | No | |
| Chimney Material | Concrete | |
| Chimney | 2 | |
| Cone Material | Concrete | |
| Cone Condition | 1 | |
| MH Diameter | 4 | |
| MH Wall Material | Precast Concrete | |
| MH Wall | 3 | Infiltration along joint |
| MH Bench | Precast Concrete | |
| MH Bench | 1 | |
| Step Material | Metal | |
| Step Condition | 1 | |
| No. of Steps | 5 | |
| Drop Manhole | No | |
| Surface Inflow | No | |
| Infiltration | Yes | |
| Surcharge | No | |

- 1 - Good condition, no defects noted
- 2 - Fair condition, minor defects, not structural
- 3 - Fair condition, minor structural defects
- 4 - Poor condition, structural defects
- 5 - Poor condition, major structural defects

| | Clock Pos. | Material | Condition | Shape | Diam. | From MH | To MH |
|---------------|------------|----------|-----------|-------|-------|-------------|-------|
| Outlet Pipe 1 | 6 | PVC | 1 | Round | 0.66 | | MS2 |
| Inlet Pipe 1 | 1 | PVC | 1 | Round | 0.5 | Lateral for | |
| Inlet Pipe 2 | | | | | | | |
| Inlet Pipe 3 | | | | | | | |
| Inlet Pipe 4 | | | | | | | |
| Inlet Pipe 5 | | | | | | | |
| Inlet Pipe 6 | | | | | | | |



Manhole MS3 infiltration photo.



Manhole MS3 inlet photo.



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What we've learned!

- Online data for a digital world
 - Making data accessible to operations staff
 - Digitizing historic plans
 - Records management system
- Collaborative data exchange
 - Connecting those who know with those who manage
 - Documenting field photos
 - Correcting locational information
 - Field data collection
- Mobile database population
 - Capturing institutional knowledge
 - Adding attribute data in the office or in the field
 - Using form-based surveys to generate reports



QUESTIONS





Thanks for joining us!

Download the slides at ssmgroup.com

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