
PURPOSEBUILT SYSTEMS

DRU

FIELD TRAINING HANDBOOK

Capture utility records. Understand reference data. Deliver a reviewable handoff.

GUIDED TUTORIAL + CREW PRACTICE + TRAINER TOOLS

iOS field workflow, with the national GIS Reference update clearly marked as a next-build preview. Android 0.3.0 is a development build with partial features and no WFS registry UI.

COURSE GUIDE

A practical orientation, not a credential

Digital ROW Utilities (DRU) captures utility points, lines and photos with documented methods and reported uncertainty, browses public GIS reference data, and exports reviewable records.

Use this course

Allow 50 minutes for the guided lessons, 25 minutes for the field lab and 15 minutes for the trainer review. Work in a safe practice area with fictional identifiers. No production publishing or permit submission is required.

Release and platform scope

Verified October 14, 2026: iOS 1.0.3 is available on the App Store (released October 13). The later national GIS expansion and Reference filter still require a new iOS release. Use the utility registry in your installed version; complete the preview lesson when the update is available.

Course map

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Practice and review tools

Pages 13-18: guided field lab, trainer plan, handoff checklist, troubleshooting, knowledge check, answers and sources. Pages 19-22: actual published iOS screenshot examples. The web tutorial is the reading alternative to this PDF and saves only module-completion flags in your browser.

LESSON 01

Prepare your device and training session

Start with the right permissions, units, and a practice record that will not be mistaken for production data.

Guided lesson: 4 minutes. Button labels may differ in your installed build.

Step 1

Install or update Digital ROW Utilities from its official App Store listing. Read the onboarding screens, then open Settings and note the version and display units you are using.

Step 2

Allow location while using the app for field capture. Enable Precise Location when the work requires it. Camera access is needed for photos, OCR and live AR; photo selection permissions depend on the workflow. Grant permissions when prompted for that feature.

Step 3

Charge the device, check storage and prepare any offline maps needed for the site. Start a practice project named DRU TRAINING - DO NOT SUBMIT. Use fictional identifiers and a safe training area.

Practice

Write down the installed version, unit preference, and the location permission state. Identify how you would restore a denied camera permission in iOS Settings.

Check before moving on

I can identify my app version, units, permission settings and practice project.

Interpret the evidence

A permission grant does not establish measurement accuracy. Network access is needed for fresh public GIS queries; a saved project does not mean every online layer is available offline.

LESSON 02

Set the project, permit and work area

Make each capture traceable to the correct job and work area.

Guided lesson: 5 minutes. Button labels may differ in your installed build.

Step 1

Create or activate the practice project before collecting features. Review the project and permit shown in the capture header; do not rely on the last project used by another crew member.

Step 2

If your workflow requires a permit record, enter the applicant, owner, work description and dates in the permit setup. Record an actual authorization only when it has been issued; a draft application is a different record.

Step 3

In Select Work Area, tap at least three polygon vertices around the practice area. Use Undo or Restart to correct the boundary, then Finish Area. Inspect the saved outline at a useful map scale.

Practice

Draw a four-vertex practice work area and explain how you would detect a wrong project or an outline placed on the wrong street.

Check before moving on

My active project, permit context and saved work area match the practice assignment.

Interpret the evidence

A work-area polygon records intended work. It does not establish property ownership, a legal ROW boundary, permit approval, or permission to excavate.

LESSON 03

Capture a point with evidence

Save one recognizable asset with its observed location, identity and supporting photo.

Guided lesson: 5 minutes. Button labels may differ in your installed build.

Step 1

Open Capture Utilities or the capture map. In the map workflow, use Add, then Point. In builds with the standalone capture screen, use point capture and wait for the GPS indication before recording.

Step 2

Set the utility domain and asset type. Enter the owner and a unique training asset ID such as TRAINING-VALVE-01. Review the capture method and the reported positional uncertainty. Explain whether the location came from GPS, a map tap or another input.

Step 3

Attach a context photo and a close-up showing the asset identity. Add a concise note about what was observed. Review required fields, save the feature, then reopen it from the map or feature list.

Practice

Create one fictional training point. Have a partner locate it in the saved project and explain its method, owner, photo and uncertainty.

Check before moving on

My saved point has an identifiable owner/asset, correct project linkage, photos and a documented capture method.

Interpret the evidence

Map-tapped or manually entered coordinates are different evidence from a measured field fix. Do not describe a dropped pin as a survey measurement. AI suggestions must be checked before saving.

LESSON 04

Capture a line and document changes

Represent a run as an ordered series of vertices and keep evidence attached to the feature.

Guided lesson: 5 minutes. Button labels may differ in your installed build.

Step 1

Choose Line in the capture workflow. For map entry, add vertices along the practice alignment and use Finish before completing the attribute form. For walked GPS capture, configure the asset, use Begin Recording, and finish the recording before saving.

Step 2

Include vertices where direction or the represented alignment changes. Review the vertex order, length and geometry on the map. Enter owner, material and dimensions only when supported by the observation or source record.

Step 3

Attach photos at the start, end and important changes. Use notes to distinguish directly observed portions from record-based or inferred portions. Save, reopen and inspect the entire run rather than only its first vertex.

Practice

Save a three-vertex training line with a bend. Compare the displayed shape with your intended path and identify one place where another photo would improve the record.

Check before moving on

The line has the intended vertex order, bend, owner, units and supporting evidence.

Interpret the evidence

A line joining two points is a representation, not proof of an unseen pipe route. Do not walk an unsafe or restricted alignment merely to complete a training exercise.

LESSON 05

Review OCR, attributes and data quality

Separate observed facts, document readings and automated suggestions before review or certification.

Guided lesson: 5 minutes. Button labels may differ in your installed build.

Step 1

When Scan Material Cert is available, photograph a readable tag or certificate. Review the OCR result against the original image. Check decimal placement, diameter, wall thickness, material, manufacturer and unit labels before accepting values.

Step 2

Inspect the saved feature's required attributes and provenance. Keep unknown values unknown using the options available in the installed form. If a required field cannot be supported, resolve the evidence gap instead of entering an invented value to pass validation.

Step 3

Review quality-level assertions and their evidence with the responsible reviewer. Record the actual method and reported uncertainty. Use certification or sign-off only within your role and your project's review procedure.

Practice

Find and correct one deliberately mistyped training dimension. Explain why a complete form or a successful OCR result does not by itself establish a utility quality level.

Check before moving on

I can trace the important values back to an observation, photo or source document and explain unresolved gaps.

Interpret the evidence

App validation, ASCE-oriented fields, signatures and hashes do not independently establish compliance, survey accuracy, utility location or a professional credential.

LESSON 06

Find and compare public utility sources

Choose a relevant source and understand what its geometry represents before using it as context.

Guided lesson: 5 minutes. Button labels may differ in your installed build.

Step 1

Open WFS Registry. Search by city, county, publisher or utility. Allow location if you want nearby ranking. A Portal is a website to browse; a Service can return features to the app.

Step 2

Open a source and check its publisher, coverage, available layers and status. Choose only the layers relevant to the job, then View on Map. If no features appear, verify the map area and selected layers before assuming the service is empty.

Step 3

Compare public geometry with your captured features. Use Overlay other sources when appropriate, and retain source names in your review notes. Confirm currency, permitted reuse and positional limitations with the publisher.

Practice

Select one utility service and one portal. Explain their different behavior and identify the publisher and the geographic area of the service.

Check before moving on

I can distinguish a portal from a service and explain the provenance and limits of one selected layer.

Interpret the evidence

Public utility geometry is reference evidence. Source availability, apparent precision or an AR overlay is not an excavation locate. A service-area boundary tells you where a provider serves, not where a pipe is buried.

LESSON 07

Use the national GIS Reference update

Use roads, wetlands, flood context, parcels, ROW/easements and soils as planning layers without confusing them with captured assets.

NEXT-BUILD PREVIEW. Verified October 14, 2026: iOS 1.0.3 is available on the App Store (released October 13). The later national GIS expansion and Reference filter still require a new iOS release. Use the utility registry in your installed version; complete the preview lesson when the update is available.

Step 1

In a build containing the October 2026 update, open WFS Registry and select Reference. Search for the source category or publisher. National sources include USFWS wetlands, Census TIGERweb roads and FEMA flood context; local and regional coverage varies.

Step 2

Read the reference label, source notes, coverage extent and tested date. Select a relevant layer and View on Map. Reference geometry does not offer the underground AR asset action. Parcel and ROW outlines remain approximate reference unless the publisher and project establish otherwise.

Step 3

For soils, use the regional queryable sources where available. The official national NRCS Soil Data Access entry opens a browser portal. It is not a national in-app soil overlay. Record which source informed a decision and which additional records or field checks are needed.

Practice

When the update is available, compare one utility asset source with a wetland or parcel reference source. On an older build, use the source links in this course and describe the same distinction without checking off an unavailable app feature.

Check before moving on

I can identify the preview status and distinguish reference geometry from physical utility assets.

Interpret the evidence

The update added 278 new queryable services and one national soil portal after searches spanning all 50 states. That is discovery scope, not complete US coverage. Wetland mapping does not establish regulatory jurisdiction; roads do not establish ROW limits.

LESSON 08

Use AR and LiDAR with the right limits

Treat visual overlays and local distance/depth observations according to their actual evidence and device support.

Guided lesson: 5 minutes. Button labels may differ in your installed build.

Step 1

Use a supported physical iPhone for live AR. Grant camera access, move slowly to establish tracking and inspect the tracking state. For utility-source AR, select physical asset layers and confirm the intended source and area before opening the overlay.

Step 2

If the build and device support LiDAR or trench capture, follow the mode's prompts and confirm the reference surface, target and units. Record what was actually measured. A local surface distance is not automatically depth to a buried utility.

Step 3

Pause capture if tracking is unavailable or the scene changes. Re-establish the view and repeat observations as required by the project. Compare the record with an independent field check before relying on a measurement for a consequential decision.

Practice

Explain what you would do after tracking is lost. If no supported device is available, discuss the screen and method with a trainer; do not mark physical AR validation complete.

Check before moving on

I can identify the tracking state, the measurement's reference and units, and the need for physical-device validation.

Interpret the evidence

Simulator checks test workflow behavior with synthetic coordinates. They do not validate real camera tracking, depth, field accuracy or the location of underground infrastructure.

LESSON 09

Review, export and retain the session

Deliver a file another person can inspect and preserve the evidence needed to understand it.

Guided lesson: 6 minutes. Button labels may differ in your installed build.

Step 1

Review the active project's point and line on the map. Check owner, asset IDs, units, method, uncertainty, photos and unresolved notes. Use the editing tools appropriate to your build; review any bulk change before accepting it.

Step 2

Open Export Current Session or the session export action. Choose a format offered by the installed build that matches the recipient's needs: GeoJSON for GIS, CSV for a table, or PDF Report for a readable review. Share to an approved destination selected by your organization.

Step 3

Reopen the delivered file in the receiving workflow. Compare feature count, geometry, unit labels and photo references with the source session. Where available, retain a session bundle with supporting photos and certification state. Confirm storage or backup before deleting or clearing local records.

Practice

Export a training GeoJSON or CSV and a readable report when available. Ask a partner to verify the point and line and identify one unresolved item.

Check before moving on

A second person can open my deliverable and reconcile it to the saved session; the evidence is retained.

Interpret the evidence

An export is not automatically a restorable backup. A CSV or PDF may not carry full geometry, photos or certification state. A share-sheet action also does not prove the recipient successfully received the file.

LESSON 10

Complete the team handoff

Keep publishing, permit preparation and traffic-control linkage explicit and reviewable.

Guided lesson: 5 minutes. Button labels may differ in your installed build.

Step 1

Where GIS publishing is enabled in your build, use your organization's authorized destination. Review schema and field mapping and the queued changes before Sync now. If the app cannot confirm an upload, follow its review procedure instead of blindly repeating the submission.

Step 2

For permits, review the generated package, jurisdiction, attachments and the agency's current submission route. A prepared package is not an issued permit. Use direct submission only when the installed workflow and the receiving agency support it.

Step 3

If utility work belongs to a DTCD work zone, review the linked project or work-zone identifier. Hand off the training deliverable with its review status, source list, limitations and responsible reviewer. Keep practice records clearly labeled and separate from production submissions.

Practice

Give a two-minute handoff: project, assets, method, uncertainty, public sources, outstanding issues and next reviewer. Use a test destination for any supervised publishing practice.

Check before moving on

I can explain who receives the record, what was actually submitted and what still needs review.

Interpret the evidence

Publishing and agency submission availability vary by app build, organization and receiving system. Training completion is an orientation record, not professional certification or authorization to perform regulated work.

25-MINUTE PRACTICE

Guided field lab

Assignment

Create a clearly labeled DRU TRAINING - DO NOT SUBMIT project, one fictional valve point and one three-vertex line in a safe practice area. Do not use real customer identifiers or sensitive infrastructure details in a public training example.

1. Prepare - 5 minutes

Confirm version, units and permissions. Set the active project and a four-vertex work area. Record the permit context only as a practice draft.

2. Capture - 10 minutes

Save TRAINING-VALVE-01 and TRAINING-LINE-01 with owner, method, units and photos. Correct one deliberately mistyped dimension. Explain what is observed and what is inferred.

3. Compare - 5 minutes

Identify a public utility service and its publisher. If the Reference update is installed, inspect a parcel or wetland layer; otherwise use the linked national source documentation as a discussion exercise.

4. Handoff - 5 minutes

Export a format your partner can open. Reconcile the point and line, geometry, units and photo references. Retain the saved session and an available session bundle. List any unresolved items.

Expected deliverables

A saved practice project; one point; one ordered line; supporting photos; a source/provenance note; a readable exported file; and a short handoff naming the next reviewer. Preview-only exercises can be recorded as discussed, not physically demonstrated.

90-MINUTE FACILITATED SESSION

Trainer plan and observation record

Prepare the class

Use a supported physical iPhone, a known safe practice area, fictional asset labels and an approved test destination. Provide a non-LiDAR alternative for device-dependent lessons. Keep training records separate from production.

Opening - 5 minutes

State the learning objective: make an understandable utility record and explain its limits. Identify the installed app version and whether the Reference preview is available.

Demonstration - 15 minutes

Demonstrate active-project selection, one point, one line and one correction. Show a public utility service and a reference boundary. Model the language of observed, inferred and unknown.

Guided practice - 50 minutes

Use the ten lessons. Ask learners to explain provenance and uncertainty in their own words. Do not substitute automatic field completion for evidence.

Peer review and close - 20 minutes

Run the field lab handoff and the knowledge check. Ask learners to reopen a delivered file. Record outstanding coaching needs and any device-dependent checks not performed.

Completion standard

The trainer observes project linkage, useful point and line records, evidence review, source interpretation and a reopened handoff. Learners explain every missed knowledge-check answer. Passing this orientation does not confer professional qualification or approve production work.

PRINT AND USE ON ONE PRACTICE PROJECT

Field and handoff checklist

Before capture

Confirm authorization for the practice activity, the active project, version, units, permission state, battery, storage and any needed offline maps.

Capture review

- ☐ Correct project/permit linkage and unique asset IDs
- ☐ Owner and utility domain consistent with the assignment
- ☐ Capture method and positional uncertainty retained
- ☐ Line vertices ordered and obvious geometry mistakes corrected
- ☐ Dimensions use identified units; unknowns remain unresolved
- ☐ Photos and notes distinguish observed from record-based values

Source review

- ☐ Publisher, layer name and coverage recorded
- ☐ Utility assets distinguished from territory/reference boundaries
- ☐ Source currency and reuse terms checked for the intended use
- ☐ Preview features clearly identified; unavailable checks not claimed

Handoff review

- ☐ Recipient format agreed before export
- ☐ Delivered file reopened and reconciled to the session
- ☐ Unresolved issues and next reviewer identified
- ☐ Session/evidence retained before clearing local data

Learner: _____ Trainer: _____

Date / app version: _____

Outstanding checks / coaching: _____

QUICK REFERENCE

Troubleshooting without losing evidence

No useful GPS fix

Check location permission and Precise Location, move to an appropriate safe area with a better sky view, and review the reported uncertainty. Do not relabel a map tap as a field fix.

No camera or photos

Check the feature permission in iOS Settings. Confirm the file or image selection completed. Do not clear an existing session merely to resolve a permission prompt.

No GIS features

Confirm that the entry is a queryable Service, not a Portal. Check selected layers, visible area, network and source status. A working endpoint may contain no data inside your current area.

Reference filter absent

Check the installed version. The October 2026 Reference expansion needs a new iOS release; use the existing utility registry and discuss the preview without claiming an unavailable demonstration.

OCR value looks wrong

Compare the original image and units, correct the suggested field and retain evidence. Improve the photo if the text is illegible.

AR tracking unavailable

Pause placement or measurement. Re-establish tracking on a supported physical device and repeat observations. Simulator success is not a substitute.

Export or upload is uncertain

Keep local data. Reopen or reconcile the delivered file with the destination. Follow any review hold for ambiguous publishing; do not blindly repeat an addition.

EIGHT QUESTIONS

Knowledge check

Choose one answer per question. Record the answer letter. Discuss any missed answer with the trainer. This is an orientation check, not a professional examination.

1. A public service-territory polygon shows where a gas provider serves. What does it establish?

A. The provider's service area | B. The exact buried pipe route | C. The pipe's cover depth

2. OCR reads a pipe diameter that differs from the source tag. What should you do?

A. Use the OCR value because it is automated | B. Compare with the original, correct the value and retain the evidence | C. Replace the value with zero

3. Your installed app does not show the Reference filter. What is the correct next step?

A. Assume the national update is already live | B. Delete your project to enable it | C. Check the installed version and use the existing registry until the update is released

4. A simulator reports a known 5.000 m distance. What has that check demonstrated?

A. Simulated workflow and distance calculation behavior | B. Real-world depth accuracy | C. Correct underground pipe location

5. Why should you reopen an exported file in the receiving workflow?

A. To remove uncertainty from the source data | B. To confirm readability, feature count, geometry and units survived the handoff | C. To automatically certify the project

6. The national NRCS Soil Data Access entry in this update is what kind of source?

A. A national in-app soil overlay | B. An underground AR asset layer | C. An official browser portal, supplemented by regional queryable soil sources

7. A complete attribute form and a digital signature establish which statement?

A. The record passed those workflow steps; its evidence and quality assertions still require review | B. The record is automatically survey-grade | C. An excavation locate is no longer needed

8. An upload outcome cannot be confirmed. How should you proceed?

A. Repeat the upload until something appears | B. Follow the app's review procedure and reconcile with the destination | C. Assume it failed and delete the local record

TRAINER REFERENCE

Answers, terms and further help

1. A - A service area is a boundary. It is not physical asset geometry or a locate.
2. B - The operator verifies automated suggestions against source evidence.
3. C - The Reference update requires a new iOS release. This course labels it as a preview.
4. A - Synthetic coordinates cannot validate a real camera session or field accuracy.
5. B - Reopening provides evidence that the actual delivered file can be used.
6. C - The portal does not supply a national map overlay through the current GeoJSON client.
7. A - Workflow completion does not independently prove position, compliance or professional qualification.
8. B - Reconcile ambiguous submissions before retrying to avoid duplicate records.

Terms used in this course

WFS: Web Feature Service. ArcGIS REST: another feature-service interface supported by the registry. Portal: a browser discovery site. Reference: planning/context geometry. Provenance: where a value came from. Uncertainty: the reported limits of a position or observation. Session bundle: a packaged session/evidence handoff where offered by the build.

Publisher references and support

DRU tutorial and current course

<https://purposebuilt.systems/dru-training>

USFWS wetlands services

<https://www.fws.gov/program/national-wetlands-inventory/web-mapping-services>

Census TIGERweb services

https://tigerweb.geo.census.gov/tigerwebmain/TIGERweb_restmapservice.html

FEMA flood map service center

<https://msc.fema.gov/portal/home>

NRCS Soil Data Access

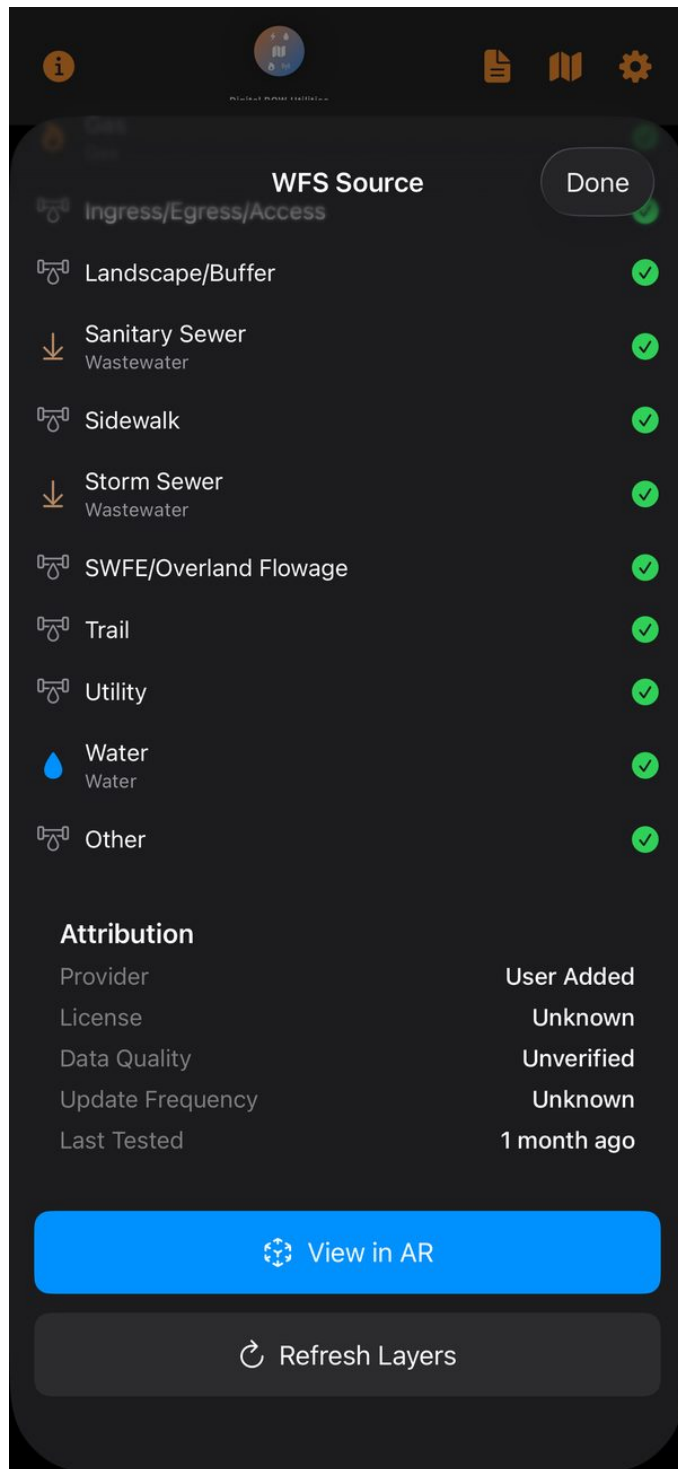
<https://sdmdataaccess.nrcs.usda.gov/>

DRU product and support

<https://purposebuilt.systems/dru>

Training completion is an orientation record. For an alternate format or support, contact matthew@purposebuilt.systems. Follow your organization's authorization, review and applicable project procedures.

Choose layers and check attribution



Earlier published iOS example. Review the selected layers and publisher metadata. An unverified source or unknown license is an evidence gap, not a quality guarantee.

Use this screen in context

Compare it with your installed build. Button labels and available actions may differ. The October 2026 national GIS Reference update remains a next-build preview.

[Open the full-size screenshot online](#)

Verify a suggested asset



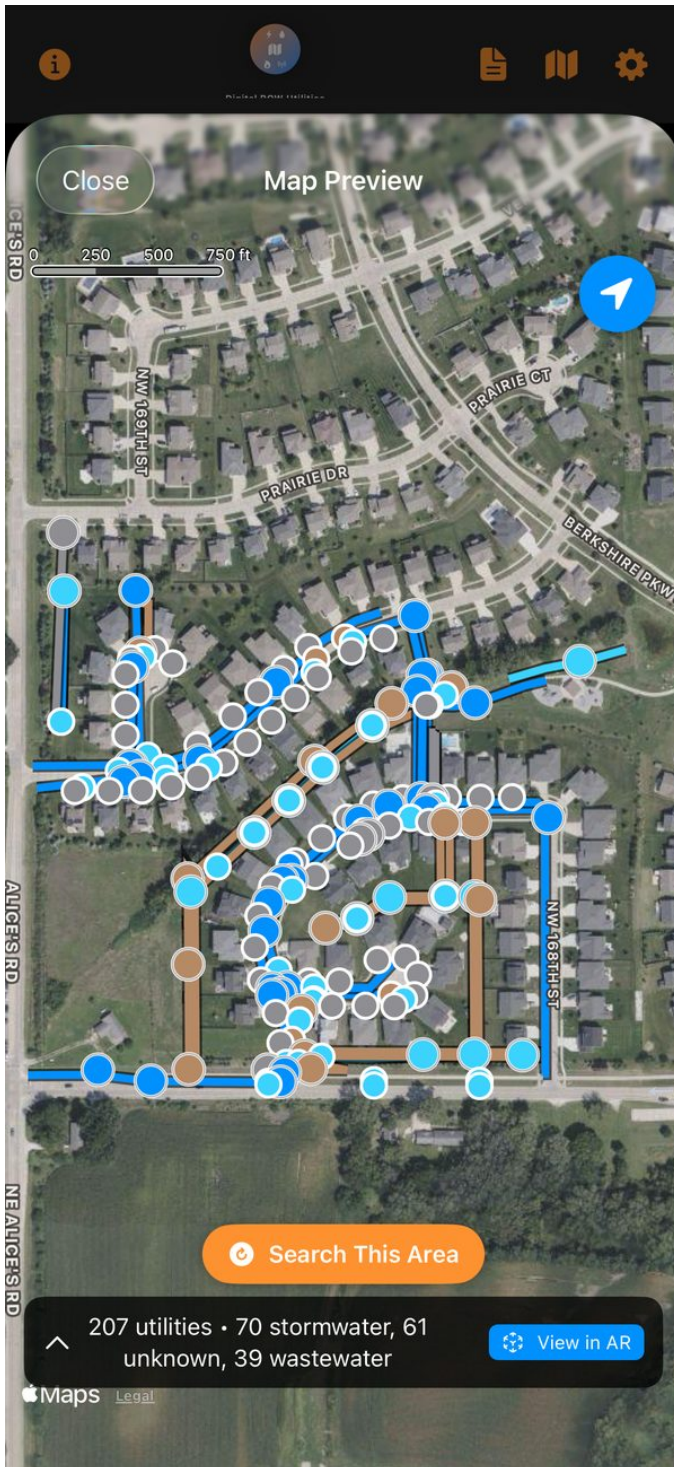
Earlier published iOS example. The on-screen percentage is a model score; it is not proof of asset identity, utility location or measurement accuracy. Verify the suggestion before saving.

Use this screen in context

Compare it with your installed build. Button labels and available actions may differ. The October 2026 national GIS Reference update remains a next-build preview.

[Open the full-size screenshot online](#)

Inspect a public utility map



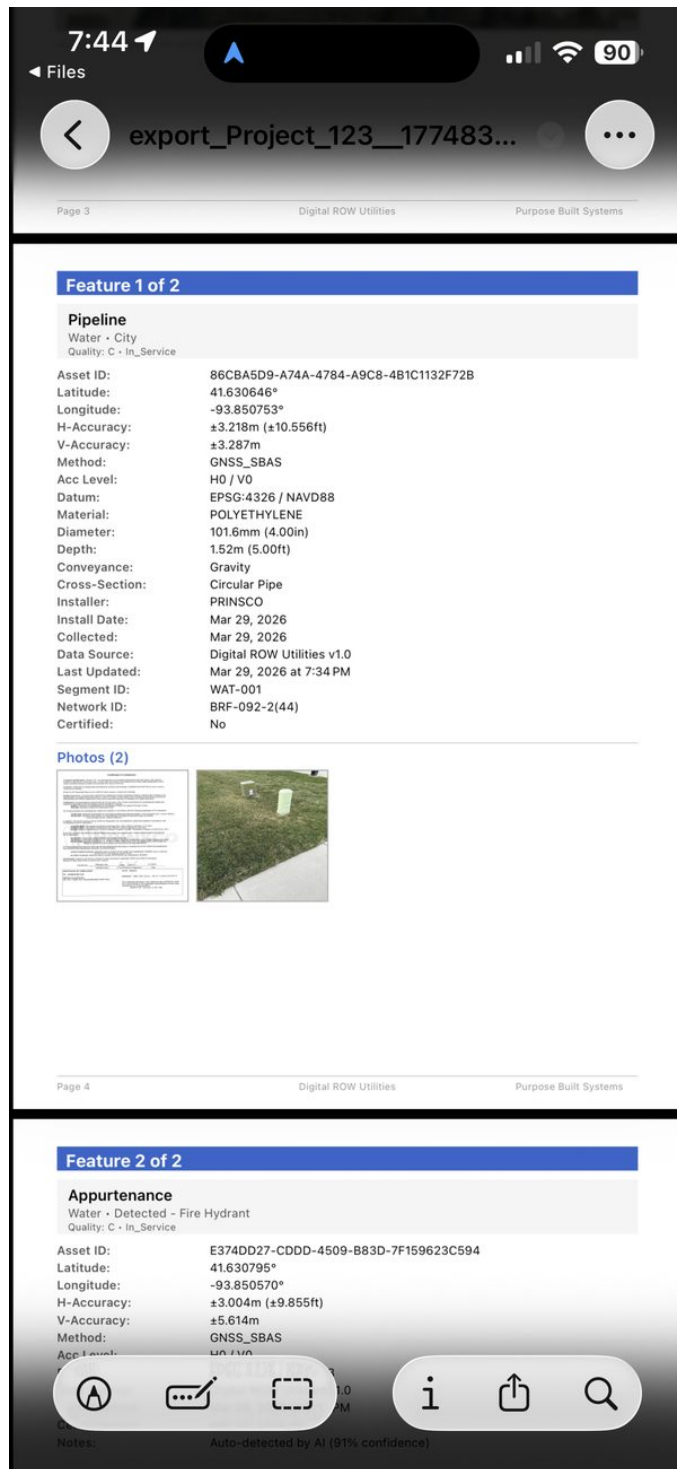
Earlier published iOS example. Confirm the source, area, legend and selected layers. Public map geometry is reference evidence. The AR action applies to physical asset sources, not the upcoming Reference category.

Use this screen in context

Compare it with your installed build. Button labels and available actions may differ. The October 2026 national GIS Reference update remains a next-build preview.

[Open the full-size screenshot online](#)

Reopen the delivered report



Earlier published iOS example, not a practice-project deliverable. Review the stated method, uncertainty, units and evidence; field values in this screenshot are not a guarantee of accuracy or compliance.

Use this screen in context

Compare it with your installed build. Button labels and available actions may differ. The October 2026 national GIS Reference update remains a next-build preview.

[Open the full-size screenshot online](#)