ASCE

Utility Engineering and Survey Institute (UESI)
Canada East Chapter (Ontario)

ASCE-38 NEW STANDARD

Standard Guideline for Investigating and Documenting Existing Utilities

Lawrence Arcand

Blaine Hunt

Lawrence Arcand, P.Eng/PE(AZ)

President – 4Sight Utility Engineers

Industry Roles

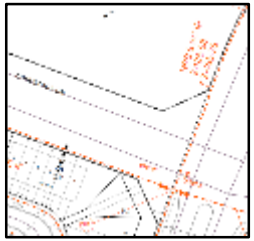
- Current Chair TAC – PUMS
- Current Vice Chair – CSA S250 Committee
- Current Member ASCE – 38-02 Standard Update Committee
- Current Board Member ASCE – Utility Risk Management Division
- Current Governor – UESI Board of Governors (Finance Lead)
- Former Chair – OPWA Right-of-Way Management Committee
- Former Chair – ORCGA Board of Directors

Blaine Hunt, P. Eng. (BC,AB,MB,ON)

Director of Engineering & Quality, Canada - T2 Utility Engineers

- Co Chair ASCE-UESI Ontario Chapter
- OPWA ROW Management Conference
- A graduate of McGill University, Mr. Hunt holds a Bachelor of Civil Engineering. He is a licensed Professional Engineer in Ontario, Manitoba, Alberta and British Columbia who has over 20 years' experience. In his current role at T2 Utility Engineers, he is responsible for the overall quality of deliverables and the application of standards across Canadian offices.
- Mr. Hunt has worked on several projects across the country including:
  - Trans Mountain Pipeline (Langley, BC)
  - Edmonton Valley Line West LRT (Edmonton, AB)
  - Deerfoot Trail Improvements (Calgary, AB)
  - Winnipeg Airport (Winnipeg, MB)
  - Hurontario LRT (Mississauga, ON)
  - Eglinton Crosstown LRT (Toronto, ON)
  - Ottawa LRT (Ottawa, ON)
  - Redevelopment of Rue Peel (Montreal, QC)

Basic Quality Levels



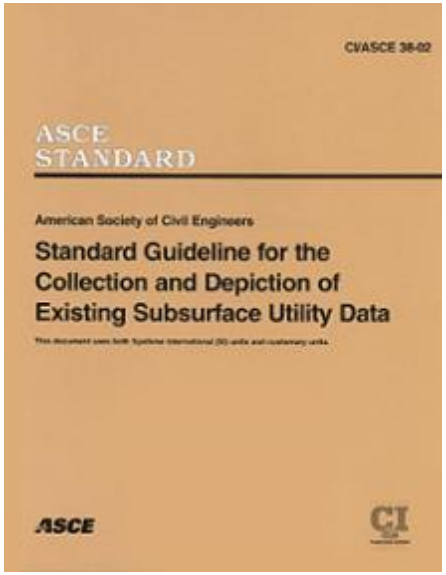
QL-D

QL-C

QL-B

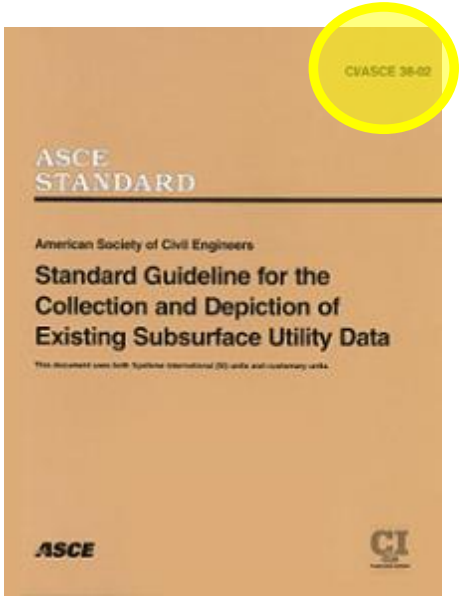
QL-A

Increasing Certainty

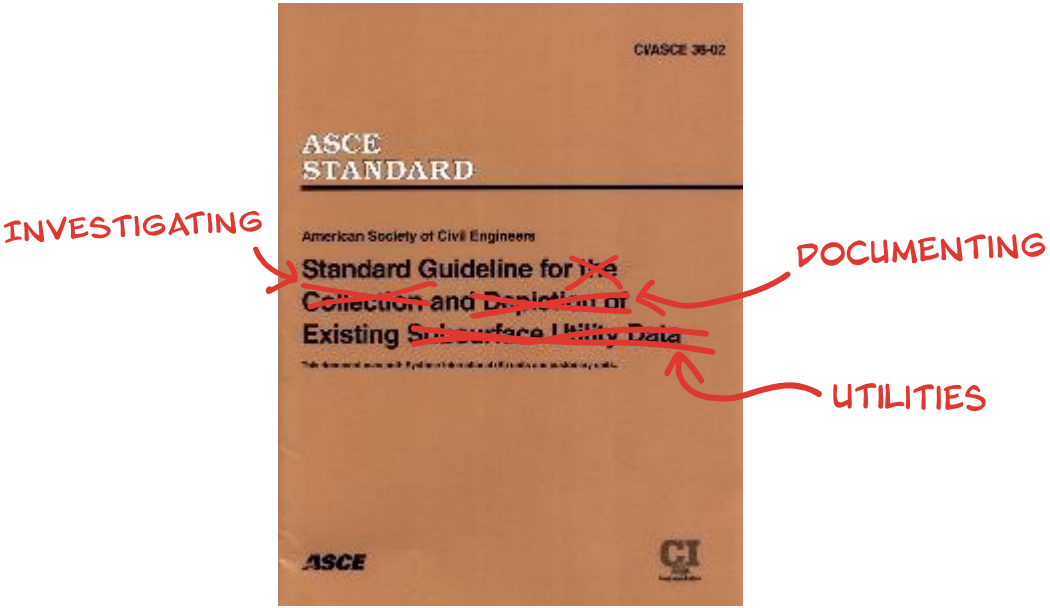


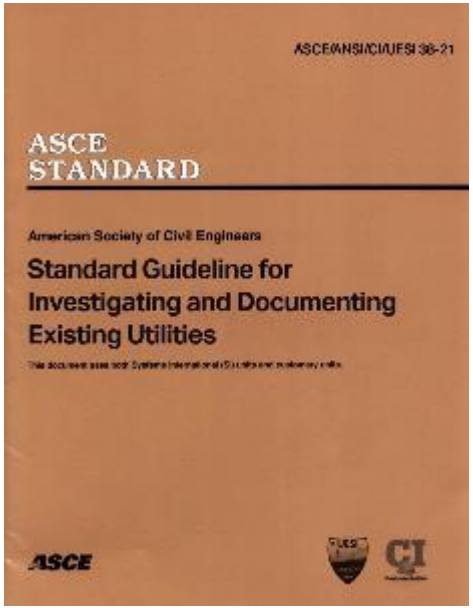
ASCE 38 - Updates

- New Name
- Quality Level clarifications
- Inclusion of Aerial Utilities in definition and work processes of SUE
- New Definitions
- Commentary
- Vaults and Other Structures (e.g. voids, Thrust Blocks)
- Depths
- 3D Models
- Utility Report



ASCE 38 - Updates





ASCE 38 - Updates

Quality Level Clarifications

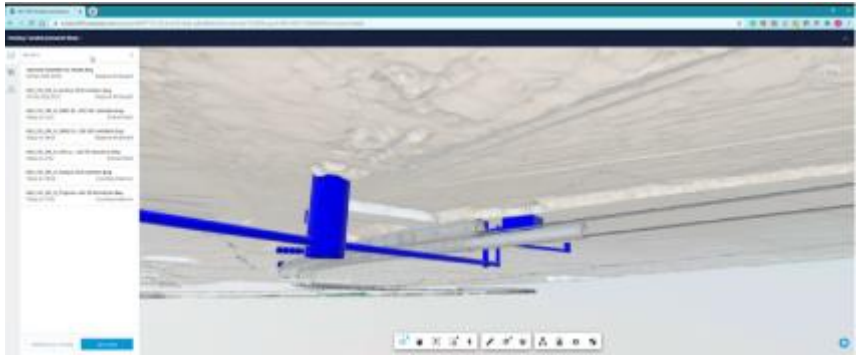
- Quality Level D
- Quality Level C
- Quality Level B
- Quality Level A

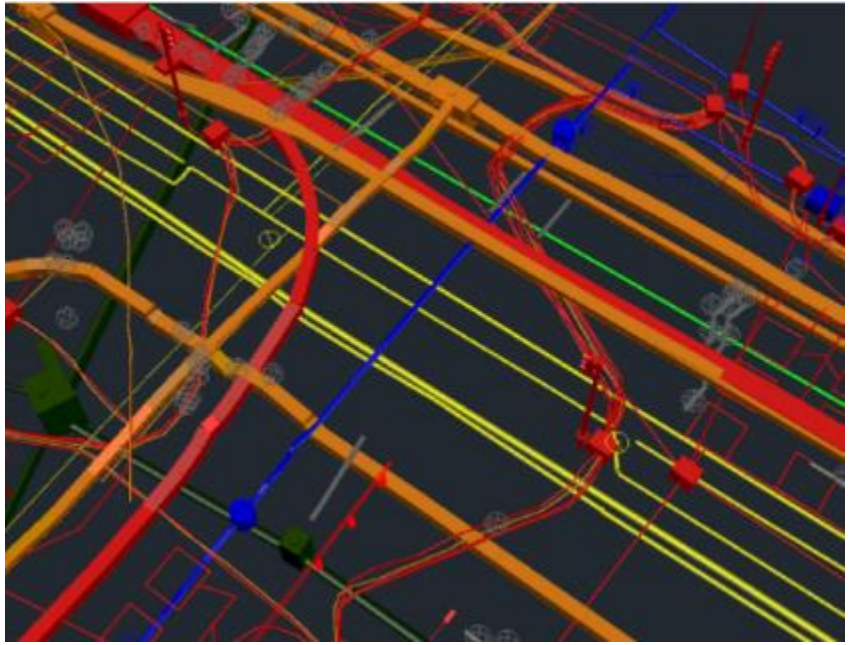
ASCE 38 - Updates

Inclusion of Aerial Utilities in definition and work processes of SUE

ASCE 38 - Updates

Acknowledgement for value of 3D Models

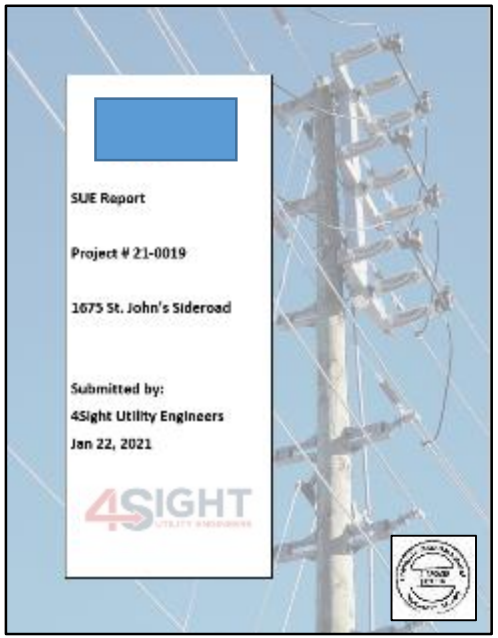




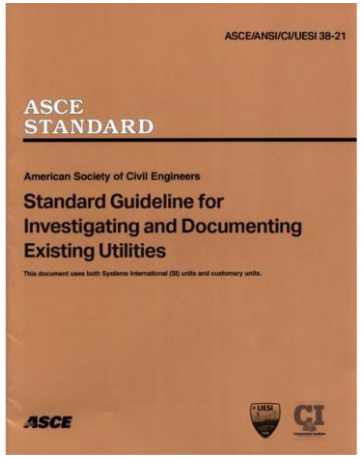
ASCE 38 - Updates

Utility Report

1. Report
2. Project Summary
3. Key Findings
4. Scope
5. Utility Records Collected
6. Drawing(s)
7. Test Hole Data
8. Invert Data



What do professionals need to know about the changes?



Professional Responsibility

Relying on the Work of Others
And Others Relying Upon our Work

Engineering Reviews

Professional Practice

Professional Responsibility

- Professional Judgement
  - Define the role of the professional
  - Consideration of overall project scope and understanding of risk
  - Interpretation of Data
  - Additional Investigations

"The result of using this standard is the assignment of a value, to buried utility segments and buried utility features, that judges the relative (non-quantifiable) uncertainty of a utility segment's or utility feature's existence, attributes, and depicted location to that of its actual location so that sound engineering decisions throughout the project delivery process can mitigate and manage those project risks due to the presence of existing utilities."

Reliance

Relying on the Work of Others and Outsourcing

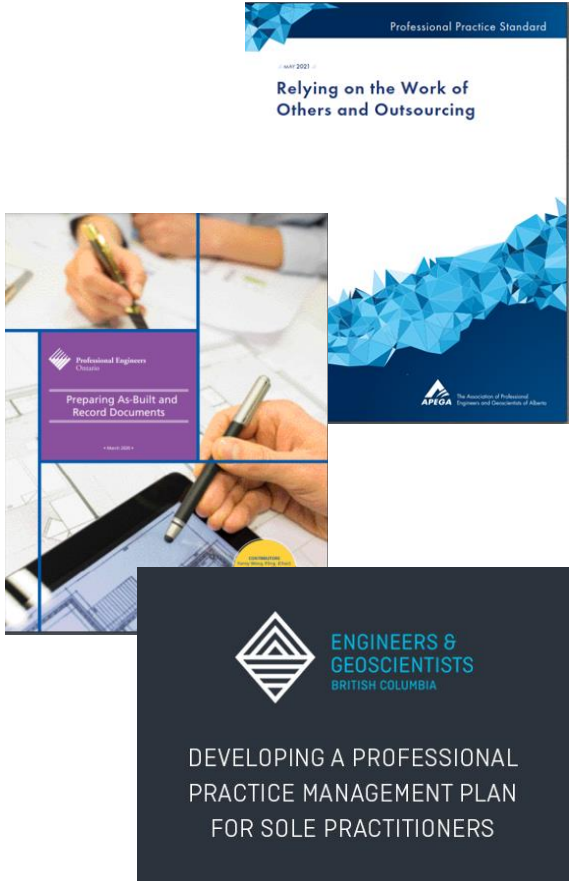
APEGA Professional Practice Standard (link)

SUE Investigation

- Responsible Professional must review work by others field work, engineering survey, records
- AS BUILT vs AS RECORDED (link)
- Previous Investigations (Preliminary Design, Reference Concept Design)

Project Owner

- SUE Professional is the “OTHERS”
- Responsible Engineer – Professional Practice Management Plans



Engineering Reviews

What is checked by the Professional?

ASCE 38 is based on Principals of Uncertainty

- Records are uncertain
- Visual indications are uncertain
- Geophysics are uncertain
- Point exposures are uncertain

Engineering Reviews (cont'd)

SUE Investigation

- Observations
- Interpretation

Understanding of First Principals

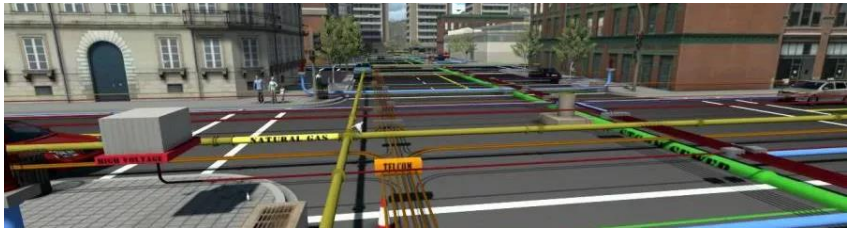
Engineering Reports

- Project Objective
- Methodology
- Analysis
- Reliance

Professional Practice

Continuing Education

- CPD hours, PEAK (PEO)



New Technologies for Collection and Depiction

- Equipment and Collection of Field Data
- GIS Asset Management
- 3D Models

New Construction Techniques

- Trenchless Technologies

Thank You

https://www.uesicanada.org/

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