



**2024 Fall Conference at The Ashore Resort
Ocean City, Maryland**

**Keeping Your License, Your Integrity, and Your Sanity
Navigating Everyday Ethical Issues in Engineering Practice**

David S. Thaler, PE, LS, DFE, D.WRE, EWRI, FRGS, F.ASCE, F.NSPE
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Andrew Brown, PE
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September 19, 2024

COL. (MD ret.) David S. Thaler

PE, LS, DFE, D.WRE, EWRI, FRGS, F.ASCE, F.NSPE

Is the Managing Principal of D.S. Thaler & Assoc., LLC; a civil and environmental engineering firm that he founded in 1978. In 2019 he won the award as the top Professional Engineer in the United States given by the National Society of Professional Engineers.

Thaler is involved with projects of extraordinary complexity and his firm has designed more than 4,000 residential, commercial, industrial and institutional land development assignments throughout the Mid-Atlantic region. The firm has extensive experience with large, difficult, and environmentally complex projects and has created many innovative designs.

Extremely active in professional affairs, Thaler has served on the Board of Directors of the Maryland Society of Professional Engineers for over 30 years, including as President. He represented the professional engineering community in legislation on numerous matters before the General Assembly of Maryland and on regulatory issues before the Maryland Board for Professional Engineers and the Maryland Department of Labor.

Thaler has been a highly visible and vocal advocate for well-engineered and designed communities and has been a tireless voice of the engineering profession. He has published more than 250 articles and five books on a wide variety of subjects, and has lectured at more than a dozen colleges and universities.



Andrew Brown, PE

A civil engineering graduate of Virginia Tech and a Maryland licensed professional engineer, Andrew Brown has over a decade of experience working as a civil engineer and project manager with a demonstrated history of work in the construction industry. His civil engineering career has spanned multiple disciplines including Land Development, Engineered Construction Products, Geotechnical Engineering, and Construction Site Inspection.

He currently designs and manages multi-million dollar infrastructure projects as a project manager for the Baltimore County Department of Public Works and Transportation and serves as the current President of the Maryland Society of Professional Engineers. Andrew combines his love of engineering and his passion for working with people to serve the engineering profession and mentor the next generation of engineers.

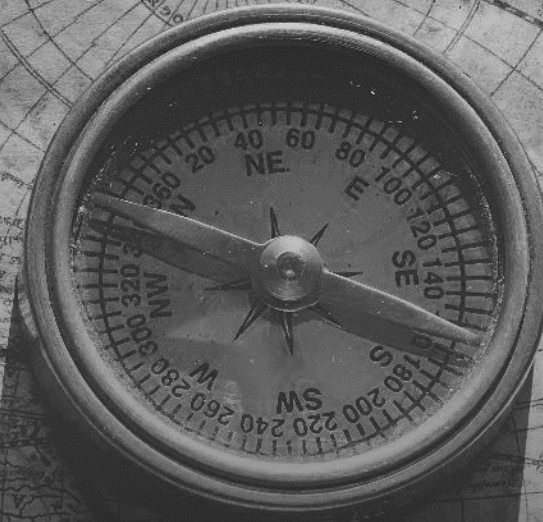


ABSTRACT

Engineering ethics can often seem very theoretical, and in some cases not very applicable. Andrew Brown and David Thaler host a conversation covering some of the everyday ethical issues encountered by engineers and provide some tips for avoiding these ethical dilemmas. Their discussion covers the ethical obligations of engineers, the meaning and proper use of the engineering seal, common ethical violations, and practical advice on how to protect yourself from common problems in engineering practice.

A CONVERSATION
ON NAVIGATING
EVERYDAY
ETHICAL ISSUES
IN ENGINEERING
PRACTICE

KEEPING YOUR LICENSE YOUR INTEGRITY AND YOUR SANITY



BY

ANDREW BROWN, PE

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WHY ETHICS?

WHY ETHICS?

**NOT HAVING A CODE OF ETHICS HAS
SEVERE CONSEQUENCES**

WHY ETHICS?

LET'S START WITH A STORY



WHY ETHICS?

LET'S START WITH A STORY

BAG MAN

THE
WILD CRIMES,
AUDACIOUS COVER-UP
&
SPECTACULAR
DOWNFALL
OF A
BRAZEN CROOK
IN THE
WHITE HOUSE



BASED ON
THE HIT
PODCAST

RACHEL MADDOW

★★★★★ AND MICHAEL YARVITZ

YOUR OBLIGATIONS

THE PUBLIC



OTHER PROFESSIONALS



BASIC PRINCIPLES

1

PROTECT THE PUBLIC HEALTH, WELFARE AND
SAFETY

2

WORK UNDER UNAMBIGUOUS WRITTEN
AGREEMENTS

3

PRACTICE COMPETENTLY

4

BE HONEST

5

PRESERVE CONFIDENTIALITY

6

STAY UP TO DATE

7

AVOID CONFLICTS OF INTEREST



THALER'S IRON LAW OF ETHICS:

**WHEN IN DOUBT,
DO THE RIGHT THING.**



DELINEATION DILEMMA:

WHAT IS THE RIGHT THING TO DO?



DELINEATION
DILEMMA:
WHAT IS THE RIGHT
THING TO DO?

(WETLAND INDICATOR)

DELINEATION DILEMMA

WHAT IS THE
RIGHT THING
TO DO?



THOUGHT EXPERIMENT:

TELL IT TO THE JUDGE

BE CAREFUL OF OPINIONS

AS A LICENSED
PROFESSIONAL, YOUR
OPINION HAS SIGNIFICANCE,
AND YOUR WORDS CAN BE
USED AGAINST YOU.

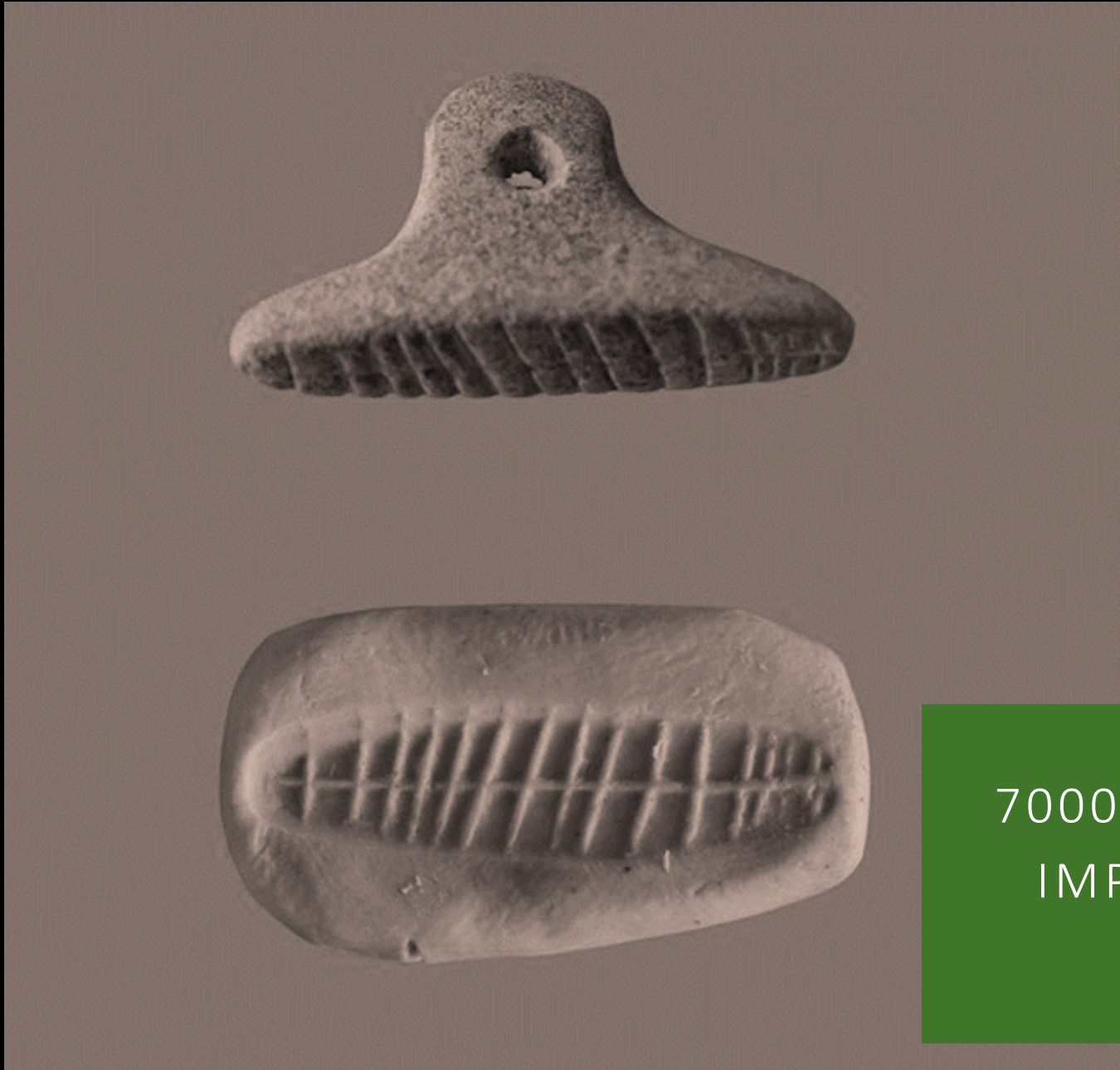




UNDERSTANDING THE PROFESSIONAL SEAL

What does it mean, and what are you responsible for?

UNDERSTANDING THE PROFESSIONAL SEAL



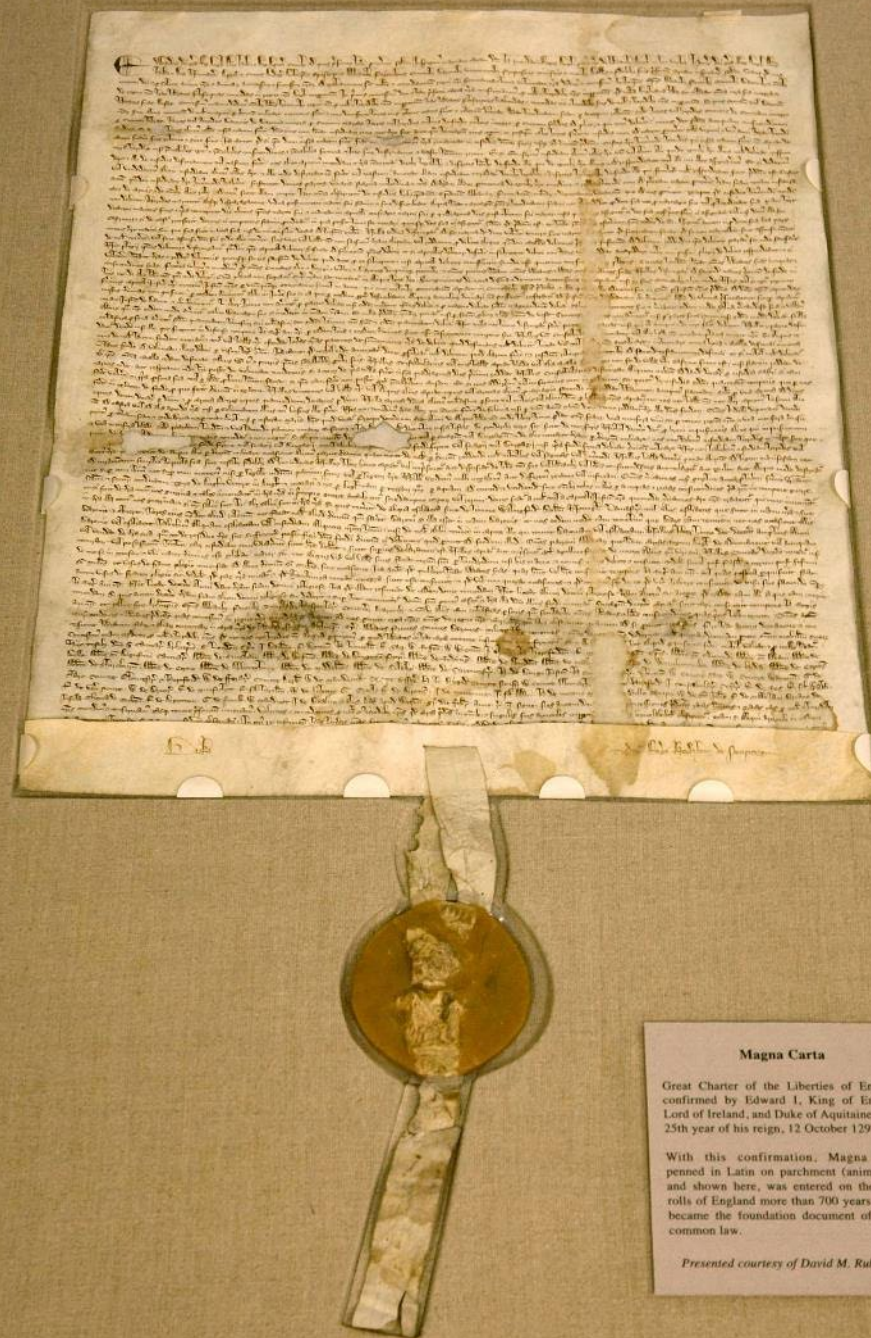
7000-YEAR-OLD
IMPRESSION
SEAL

UNDERSTANDING THE PROFESSIONAL SEAL



2500-YEAR-OLD
IMPRESSION
SEAL

MAGNA CARTA

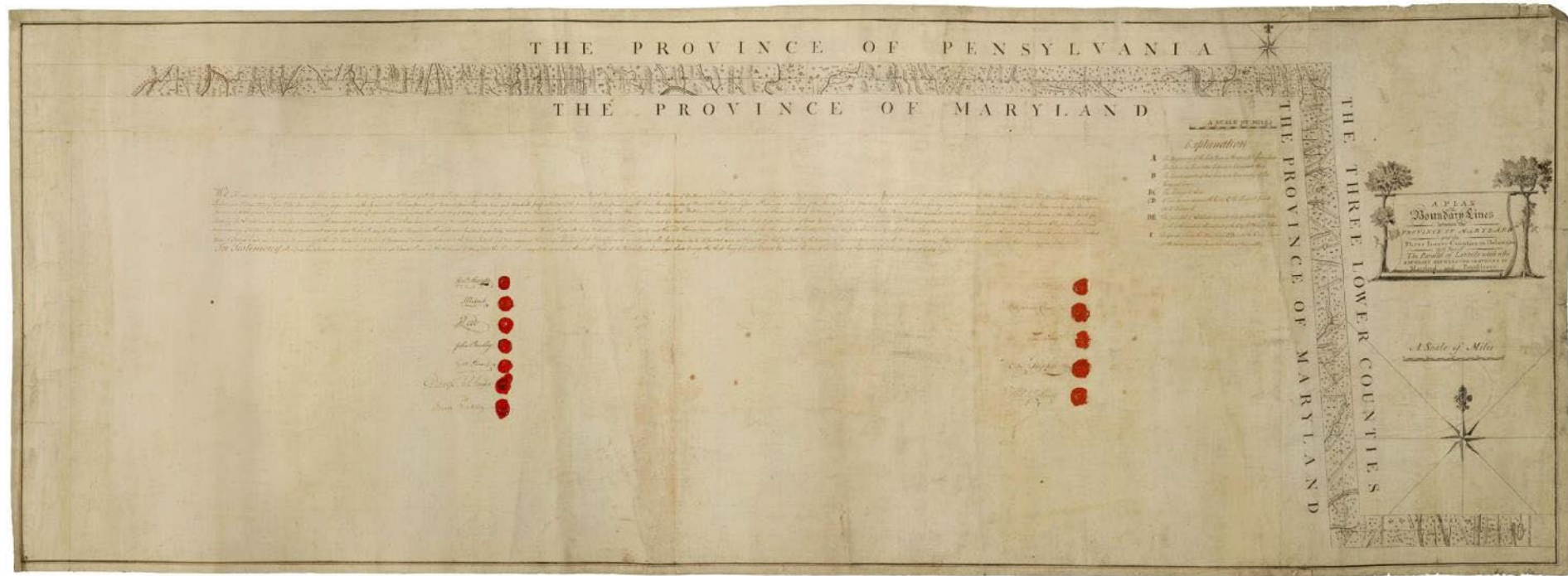


Magna Carta

Great Charter of the Liberties of England, confirmed by Edward I, King of England, Lord of Ireland, and Duke of Aquitaine, in the 25th year of his reign, 12 October 1297.

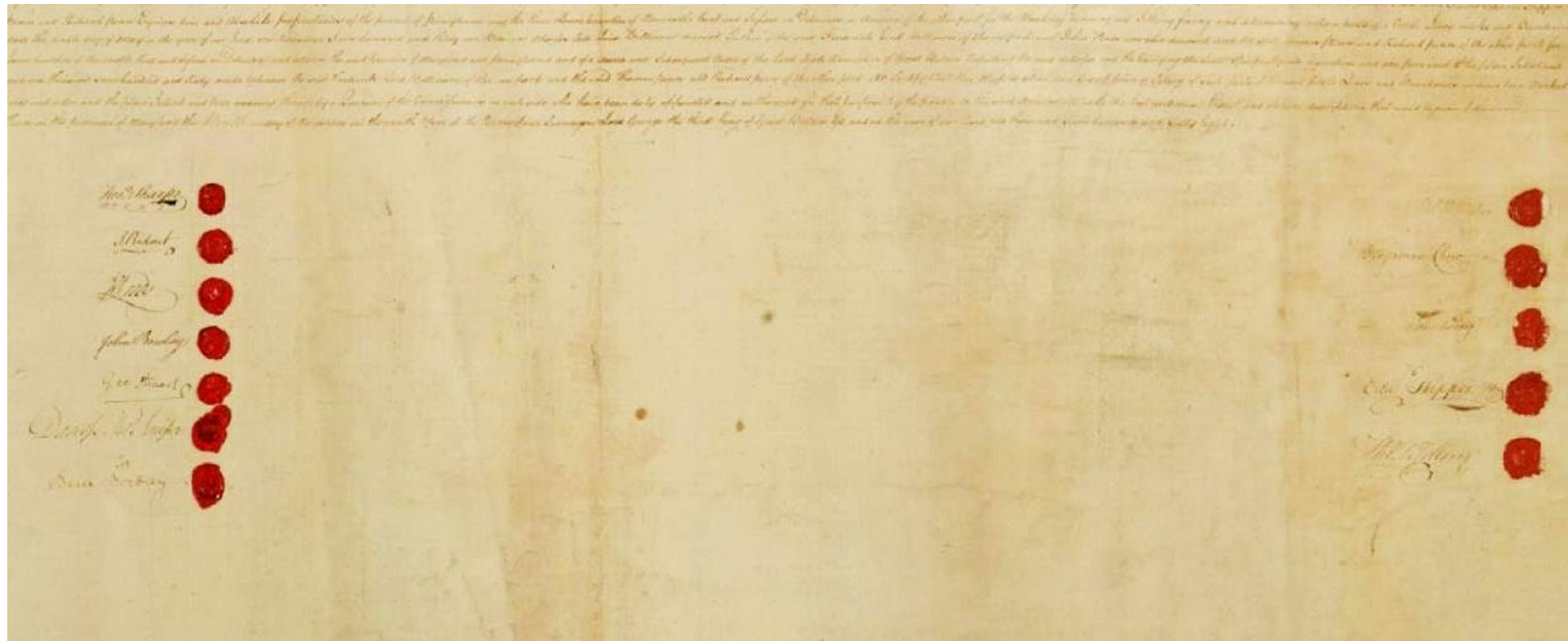
With this confirmation, Magna Carta, penned in Latin on parchment (animal skin) and shown here, was entered on the statute rolls of England more than 700 years ago and became the foundation document of English common law.

Presented courtesy of David M. Rubenstein



MASON AND DIXON PLAT OF SURVEY 1767

SIGNATURES AND SEALS ON THE MASON AND DIXON PLAT OF SURVEY 1767



UNDERSTANDING THE PROFESSIONAL SEAL

A professional engineer's seal and signature serve as a signal that the documents meet applicable engineering standards from a professional who is qualified by education, experience and licensing and is ethically bound to guard the health, safety and welfare of the public.

UNDERSTANDING THE PROFESSIONAL SEAL

Inherent in the use of the
signature and seal is

**PERSONAL
KNOWLEDGE**

Code of Ethics for Engineers

Excerpts from NSPE Code of Ethics for Engineers:

Section II: Rules of Practice

1: Engineers shall hold paramount the safety, health, and welfare of the public.

1b: Engineers shall approve only those engineering documents that are in conformity with applicable standards.

2a: Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.

2b: Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.

UNDERSTANDING THE PROFESSIONAL SEAL

The engineer is
**PERSONALLY ASSURING
THE PUBLIC**

that he or she has
reviewed the sealed
document

**YOU CANNOT
EVADE
PERSONAL
RESPONSIBILITY**



RULES FOR SIGNING AND SEALING

1

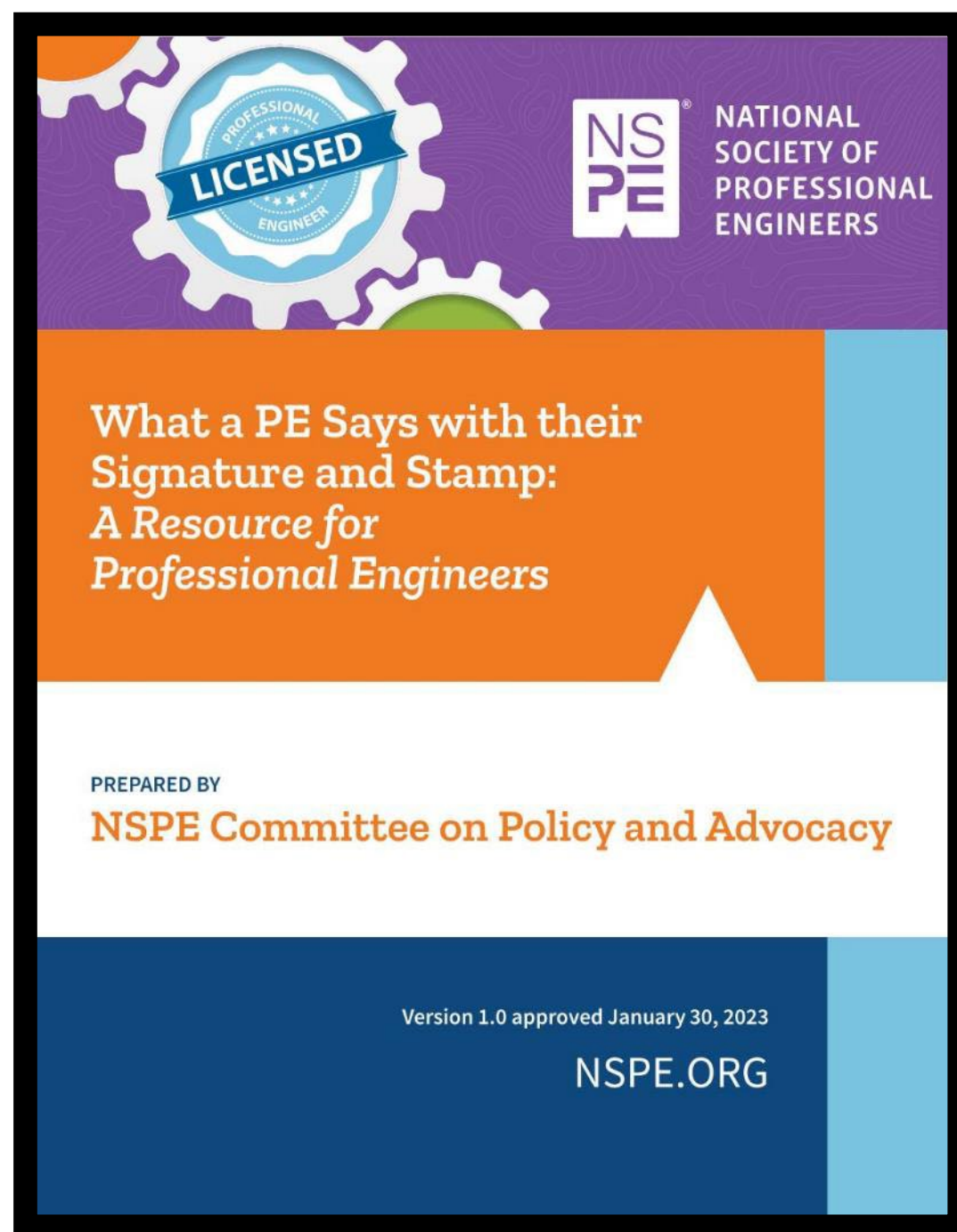
**YOU HAVE PERSONALLY PREPARED,
SUPERVISED, OR REVIEWED**

2

**MEET APPLICABLE SAFETY AND
ENGINEERING STANDARDS**

3

HAVE THE ABILITY TO CHANGE THE PLAN



Responsible Charge

Understanding of Responsible Charge is shaped by several sources:

1. NCEES Model Law defines Responsible Charge as “direct control and personal supervision of engineering work.” Note: the NSPE Board of Ethical Review has reinforced this definition throughout their case evaluations.
2. NSPE Position Statement No. 10-1778 also notes the following regarding Responsible Charge
 - a. Actively engaged in the engineering process, from conception to completion.
 - b. Engineering decisions must be:
 - i. Personally made by the Professional Engineer or
 - ii. By others over which the Professional Engineer provides supervisory direction and control authority.
 - c. The definition of Responsible Charge is not satisfied by just reviewing drawings or documents after preparation without involvement in the design and development process.
3. State-specific definitions of Responsible Charge may vary; check your local state requirements.

January 16, 2024

Ms. Sallye E. Perrin, PE, Chair
Maryland Board for Professional Engineers
1100 N. Eutaw Street, Room 121
Baltimore, MD 21201

Madam Chair and Members of the Maryland Board for Professional Engineers:

While preparing for a lecture on Engineering Ethics that I expect to deliver to the County Engineers Association of Maryland, I reviewed the white paper authored by the NSPE Committee on Policy Advocacy entitled "What a PE says with their Signature and Stamp: A Resource for Professional Engineers." The definition of "Responsible Charge," as defined in the white paper, differs from my understanding of Responsible Charge in Maryland. Therefore, I respectfully request a clarification of the Board's position.

The white paper states that:

The definition of Responsible Charge is "direct control and personal supervision of engineering work that is not satisfied by just reviewing drawings or documents after preparation without involvement in the design and development process." It further states that to be in Responsible Charge one must be "actively engaged in the engineering process from **conception to completion.**" (Emphasis added.)

My understanding is:

That a PE may review plans prepared by others and seal and sign them so long as: they met all applicable standards, rules and regulations and that one "has the ability to change them."

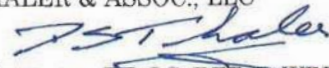
I believe that in Maryland, having the ability to review plans and change them constitutes Responsible Charge.

I would appreciate it if the Board would make clear its position as to when and under what circumstance a professional engineer may review and sign/seal plans prepared by others.

Thank you so much for your cooperation.

Very truly yours,

D.S. THALER & ASSOC., LLC



David S. Thaler, PE, LS, DPE, D.WRE, FRGS, F.ASCE, F.NSPE
Managing Member



DIVISION OF OCCUPATIONAL AND PROFESSIONAL LICENSING
Maryland Board for Professional Engineers
1100 N. Eutaw Street, 5th Floor
Baltimore, MD 21201

May 9, 2024

VIA EMAIL & FIRST-CLASS MAIL

D.S. Thaler & Assoc., LLC
7115 Ambassador Rd,
PO Box 47428
Baltimore MD 21244

Dear Mr. Thaler,

The Maryland Board for Professional Engineers reviewed your correspondence during its regular business meeting. In your letter, you inquired about the State interpretation of "Responsible Charge" as it relates to the following:

That a PE may review plans prepared by others and seal and sign them so long as: they met all applicable standards, rules and regulations and that one "has the ability to change them."

The PE Board determined that a managing agent should be in a position to act on behalf of the corporation, partnership, or limited liability company under §14-413. Reviewing the work of another PE represents a different area of professional practice, previously completed instruments of service or projects. The Code of Maryland Regulations (COMAR) 09.23.03.09, .09 **Signing and Sealing Requirements**. A licensee may sign and seal plans, specifications, drawings, reports, or other documents that are required to be signed and sealed ... only if the following requirements are met:

C. A licensee may complete, correct, revise, or add to the work performed by another licensee when engaged to do so by a client, if the following requirements are met:
(1) The client furnishes the documentation of the work submitted to the client by the first licensee;

(2) The first licensee, if still engaged in a business of providing engineering services, is notified in writing by the second licensee of the engagement referred to in this section immediately upon acceptance of the engagement; and
(3) The second licensee signs, seals, and is responsible for the completions, corrections, revisions, or additions that the second licensee made.

D. Nothing in §C of this regulation is intended to relieve the first licensee from any liability that the first licensee is deemed to assume for work performed by the first licensee pursuant to the requirements set forth in this regulation.

E. Original Signature.

zevi.thomas@maryland.gov | 410-230-6262 | www.labor.maryland.gov
WES MOORE, GOVERNOR | ARUNA MILLER, LT. GOVERNOR | PORTIA WU, SECRETARY



DIVISION OF OCCUPATIONAL AND PROFESSIONAL LICENSING
Maryland Board for Professional Engineers
1100 N. Eutaw Street, 5th Floor
Baltimore, MD 21201

(1) A licensee who prepared or approved documents in accordance with the criteria set forth in this regulation shall place the licensee's original signature and date of the signature on the documents required to be signed and sealed pursuant to Business Occupations and Professions

We hope the description under Signing and Sealing Requirements COMAR will provide you with adequate information to fulfill your future undertaking. If you have further questions on this matter, please do not hesitate to contact me at: zevi.thomas@maryland.gov

Sincerely

Zevi Thomas
Executive Director
Board for Professional Engineers

cc. Sallye E. Perrin, PE Board, Chair
Matthew Venuti, Assistant Attorney General, Board Counsel

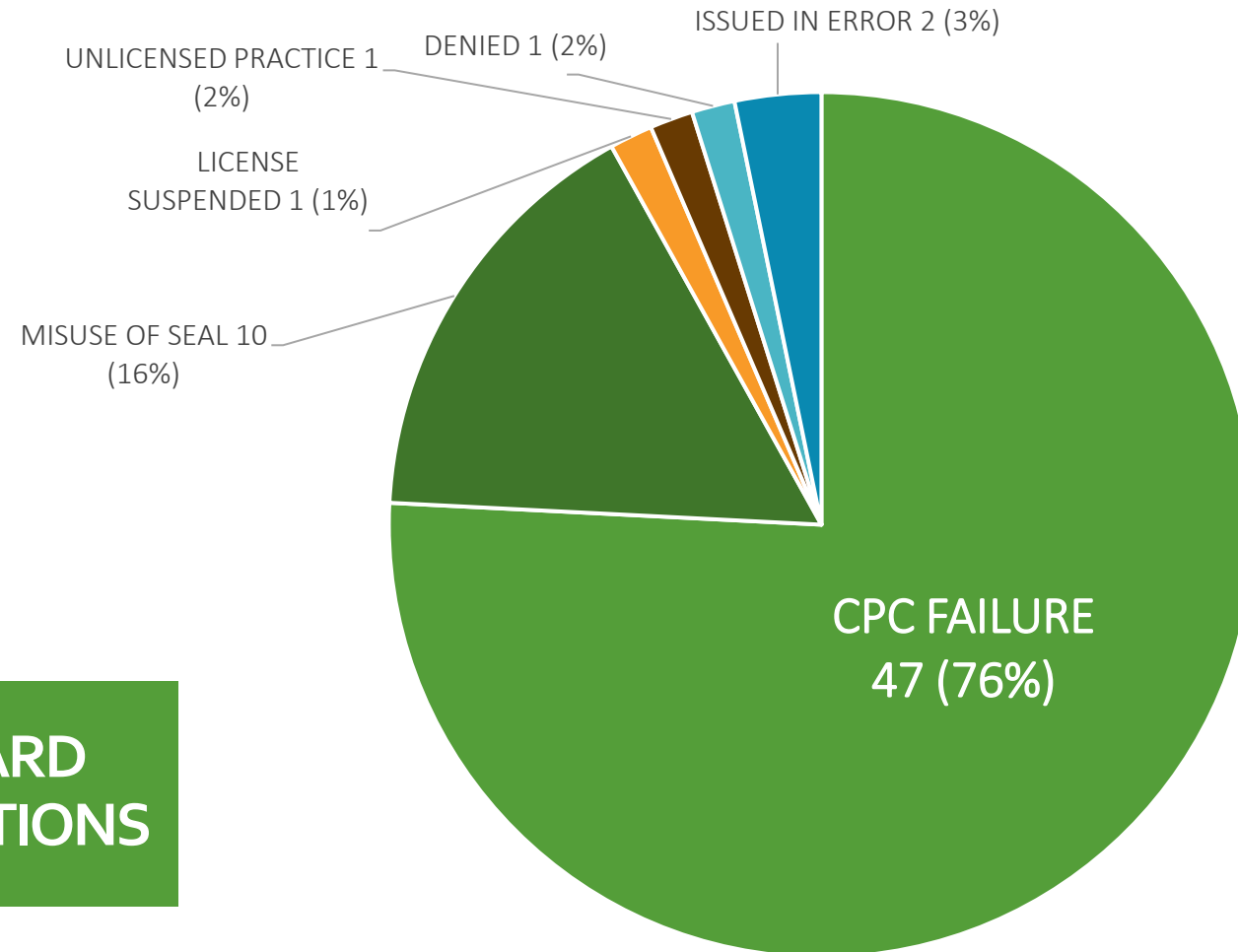
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TROUBLE

AND TIPS FOR STAYING
OUT OF IT

18,000 LICENSED PROFESSIONAL ENGINEERS IN THE STATE OF MARYLAND
AVERAGE OF 20 COMPLAINTS PER YEAR

60 DISCIPLINARY ACTIONS TAKEN FROM 2013 TO 2023



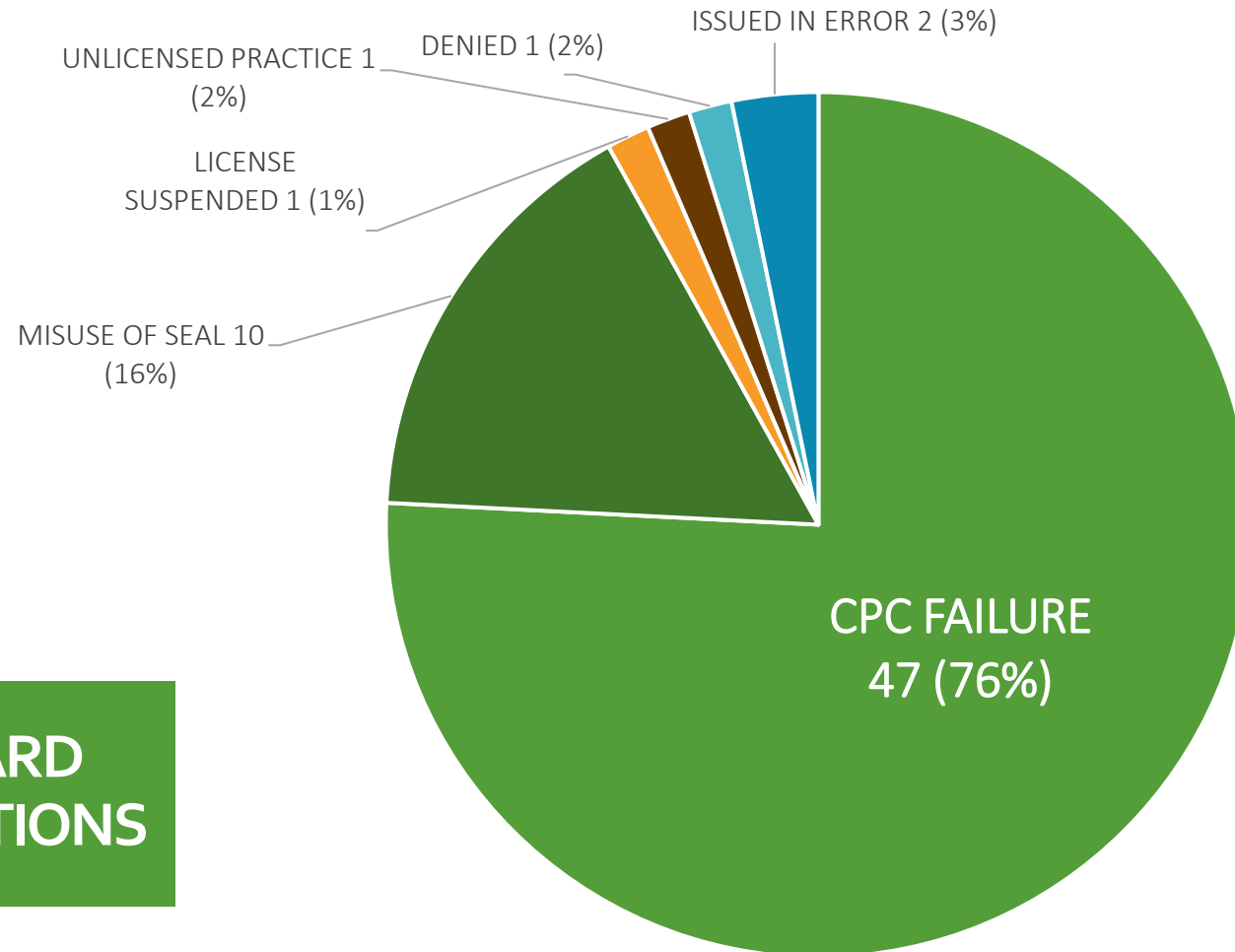
LICENSING BOARD
DISCIPLINARY ACTIONS



LICENSING BOARD DISCIPLINARY ACTIONS

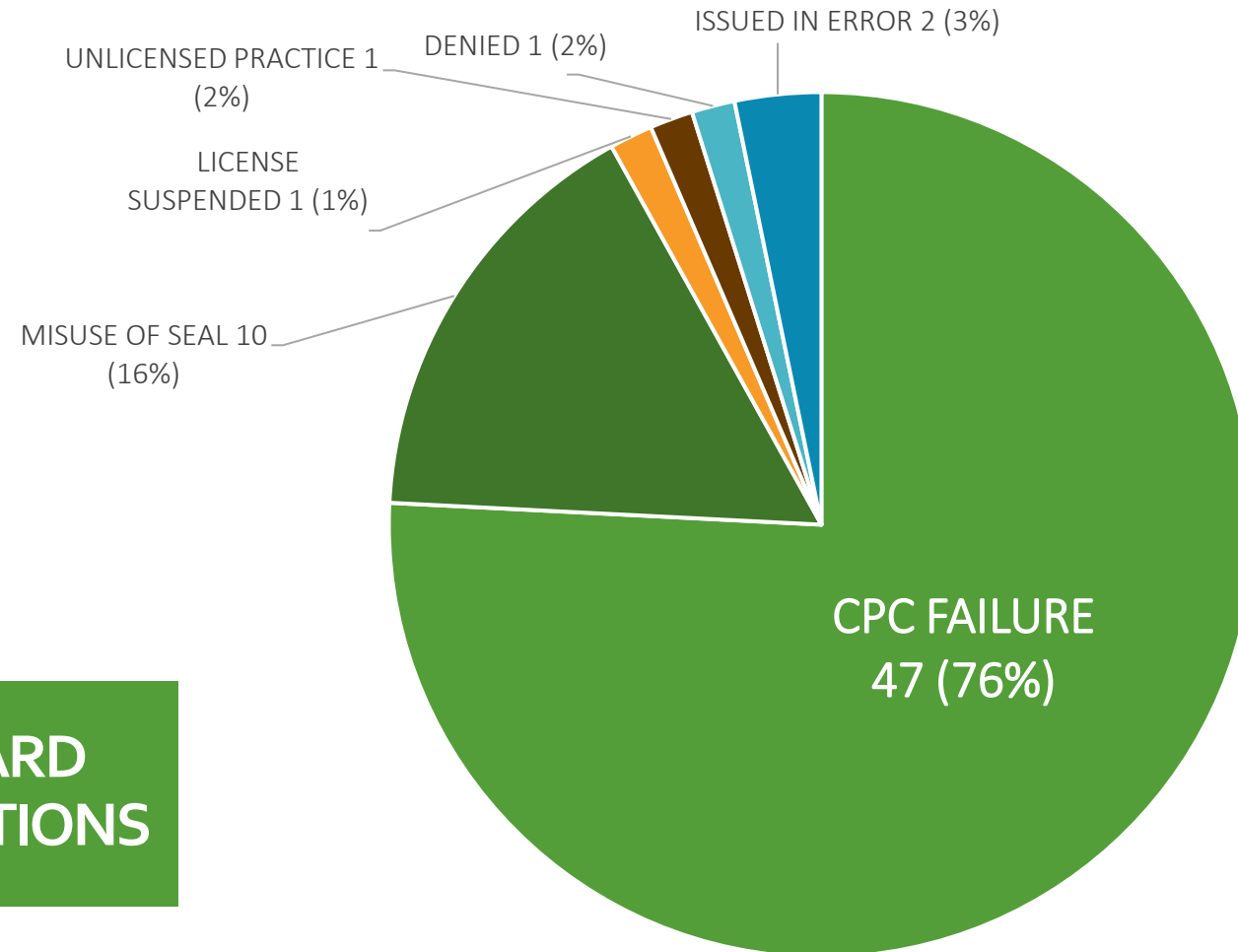
18,000 LICENSED PROFESSIONAL ENGINEERS IN THE STATE OF MARYLAND
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60 DISCIPLINARY ACTIONS TAKEN FROM 2013 TO 2023



**LICENSING BOARD
DISCIPLINARY ACTIONS**

CPC REQUIREMENTS ARE ONLY 16 HOURS EVERY 2 YEARS IN THE STATE OF MARYLAND, WITH A MINIMUM OF 1 HOUR OF CONTENT RELATED TO ETHICAL CONCERNS, CODE OF CONDUCT, STANDARDS OF CARE, OR APPLICABLE LAWS AND REGULATIONS.



LICENSING BOARD DISCIPLINARY ACTIONS

CODE OF MARYLAND REGULATIONS (COMAR)

Excerpt from COMAR 09.23.06.03(B.)

A minimum of 1 PDH unit in each individual biennial licensing term shall be earned from the participation in and the completion of qualifying programs with content areas related to the following:

- (1) The awareness of ethical concerns and conflicts related to the practice of engineering;
- (2) An enhanced familiarity with the code of conduct for professional engineers;
- (3) An understanding of standards of practice or care related to the practice of engineering; or
- (4) Laws and regulations applicable to the practice of engineering in Maryland.

TROUBLE

AND TIPS FOR
STAYING OUT OF IT



GET YOUR CPC CREDITS, AND DON'T LIE
ABOUT IT

TROUBLE

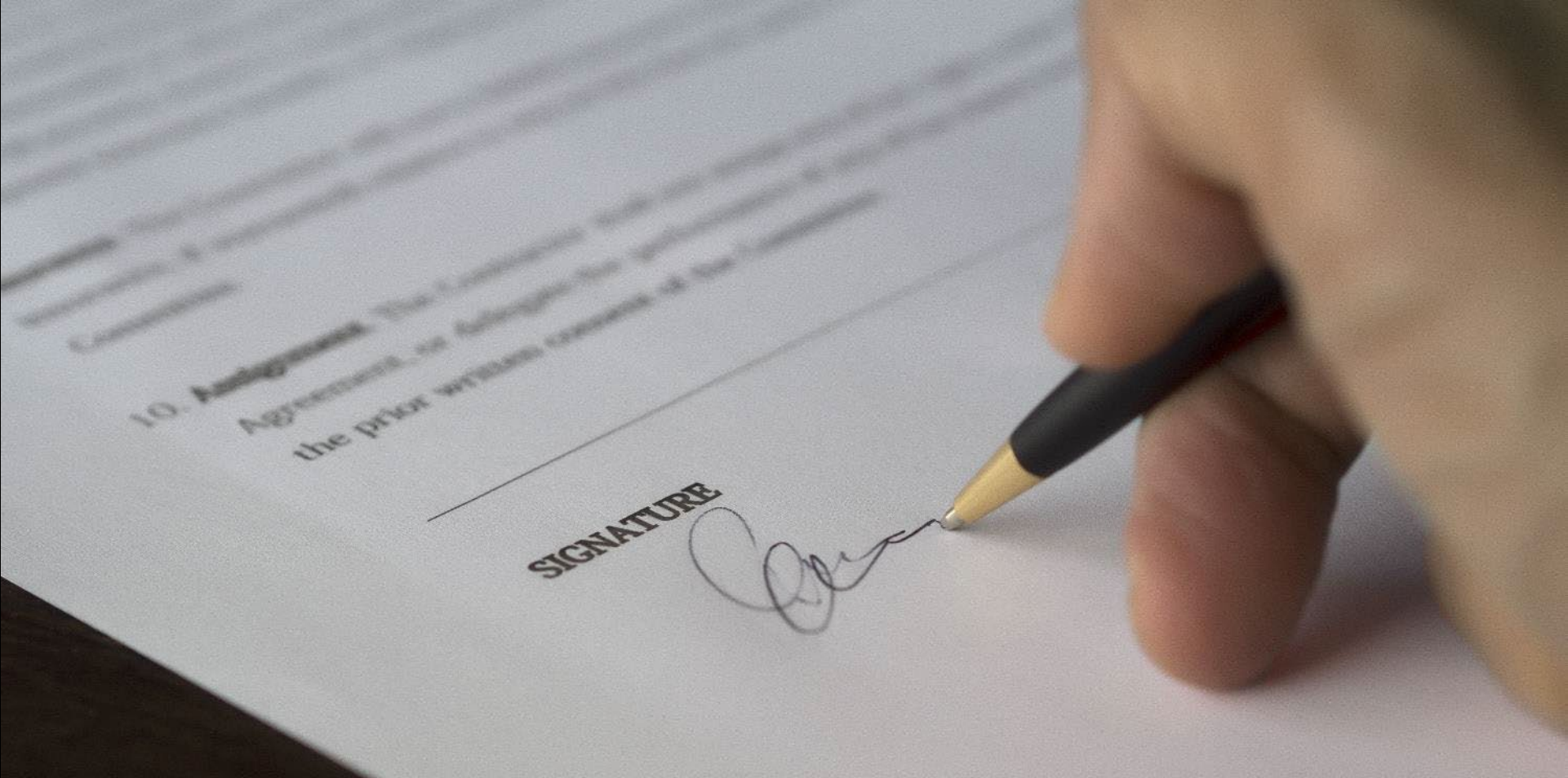
AND TIPS FOR
STAYING OUT OF IT



GET YOUR CPC CREDITS, AND DON'T LIE
ABOUT IT




WORK UNDER
UNAMBIGUOUS WRITTEN
AGREEMENTS



THE IMPORTANCE OF UNAMBIGUOUS WRITTEN AGREEMENTS

MAKE SURE YOUR SCOPE OF WORK,
SCHEDULE, AND TERMS OF
COMPENSATION ARE CLEAR

A close-up photograph of a hand holding a black and gold pen, signing a document. The document has a 'SIGNATURE' label and some pre-printed text. A green rectangular box is overlaid on the top left of the image, containing white text.

To the maximum extent permitted by law, the client agrees to limit the consultant's liability for the client's damages to a sum of \$..... or the consultant's fee, whichever is greater.

THE IMPORTANCE OF UNAMBIGUOUS WRITTEN AGREEMENTS

LIMITATION OF LIABILITY CLAUSE

...MEET ALL APPLICABLE LOCAL, STATE,
AND FEDERAL CODES...

...HAS BEEN CONSTRUCTED IN COMPLETE
ACCORDANCE WITH DESIGN DRAWINGS...

CERTIFICATIONS

CAREFULLY REVIEW AND UNDERSTAND
THE LANGUAGE OF A CERTIFICATION
BEFORE YOU SIGN OFF. CAN YOU
GUARANTEE THAT WHAT YOU ARE
SIGNING IS IN FACT TRUE?

...TO THE BEST OF MY KNOWLEDGE...

...HAS BEEN CONSTRUCTED IN GENERAL
CONFORMANCE WITH DESIGN DRAWINGS...

SIGNATURE

CERTIFICATIONS

CONSIDER REVISING THE LANGUAGE
TO SOMETHING YOU CAN
REASONABLY SIGN OFF ON.



CERTIFICATIONS

FORGET BOILERPLATE LANGUAGE.
CERTIFY ONLY WHAT IS ACCURATE
AND TRUE.

TROUBLE

AND TIPS FOR
STAYING OUT OF IT



GET YOUR CPC CREDITS, AND DON'T LIE ABOUT IT



WORK UNDER
UNAMBIGUOUS WRITTEN
AGREEMENTS



DO WHAT YOU KNOW
PRACTICE ONLY IN AREA OF
COMPETENCY



THERE IS NO
“HIGHEST STANDARD OF CARE.”

STANDARD OF CARE

is our requirement to perform services consistent with that level of care and skill ordinarily exercised by members of the same profession practicing under similar circumstances and performing similar services in the same or similar locality in the same period of time.



STANDARD OF CARE

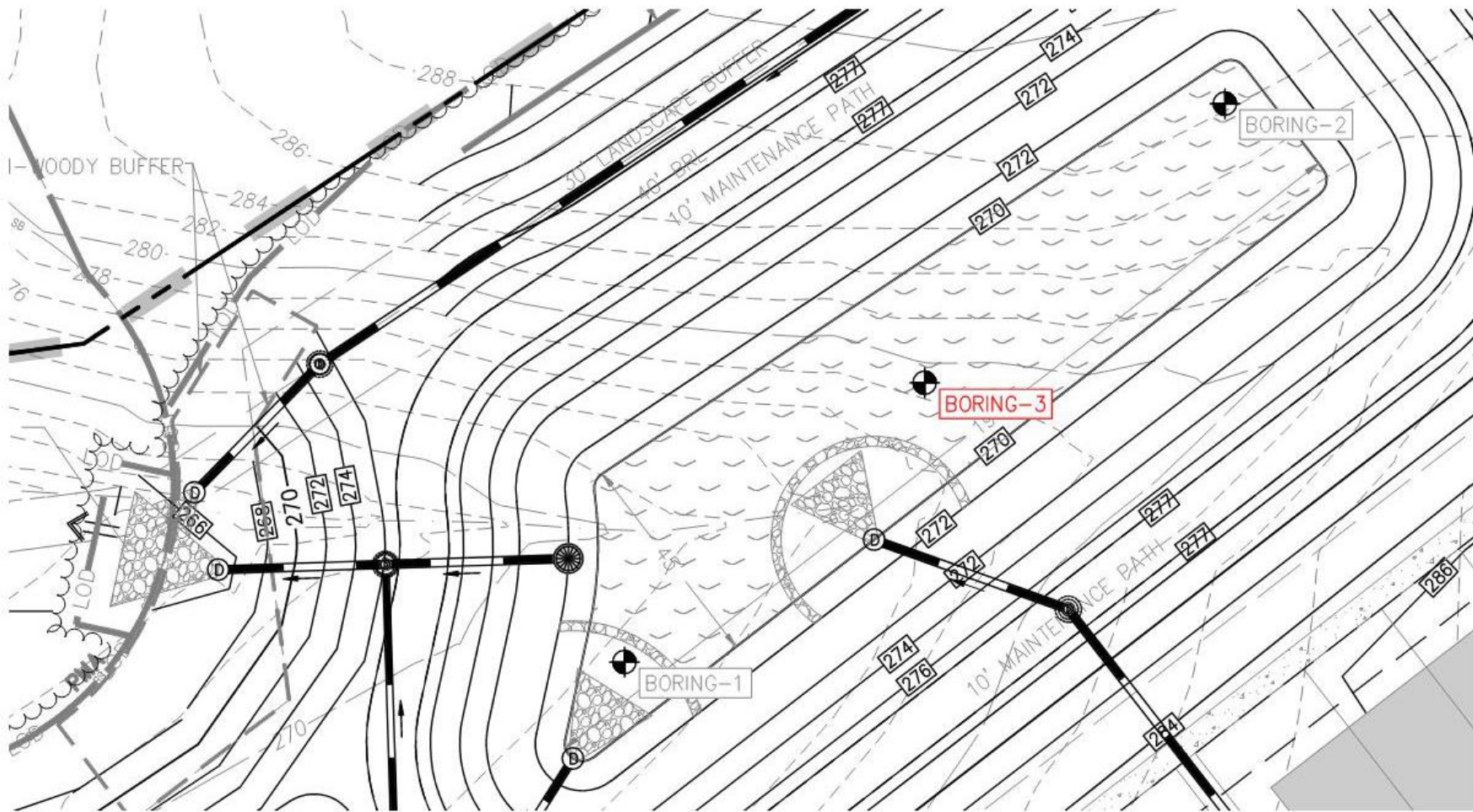
is our requirement to perform services consistent with that level of care and skill ordinarily exercised by members of the same profession practicing under similar circumstances and performing similar services in the same or similar locality in the same period of time.



PLAY THE CARDS YOU'RE DEALT



PLAY THE CARDS YOU'RE DEALT



PLAY THE CARDS YOU'RE DEALT



EMERGING TECHNOLOGY & THE DIGITAL SEAL

A conceptual photograph illustrating digital security. A thick, silver metal chain is draped over a stack of books, a black Sony smartphone, and a black computer mouse. The books are stacked on a dark surface. The top book has a cream-colored cover with the title 'The Selected Letters of Charles' visible in red script. The Sony smartphone is placed on top of the books. The computer mouse is positioned in the foreground, partially covered by the chain. The background is a plain, light brown surface.

SECURING YOUR DIGITAL SEAL

CODE OF MARYLAND REGULATIONS (COMAR)

Excerpt from COMAR 09.23.03.09 (E.)(2)(b)

- (i) It contains identification unique to a licensee using it, such as the licensee's name and license number;
- (ii) It is under the exclusive control of the licensee using it;
- (iii) It cannot be repudiated and is independently verifiable; and
- (iv) It is linked to the document in such a manner that any subsequent modifications to the document after the digital signature was appended to it will result in the document no longer being prepared or approved by the licensee.

CODE OF MARYLAND REGULATIONS (COMAR)

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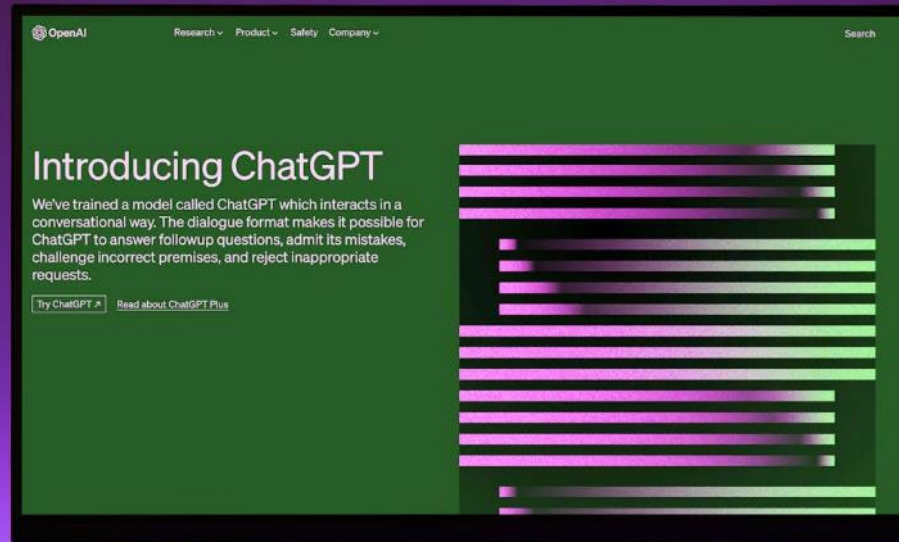


SECURING YOUR DIGITAL SEAL

WHERE DOES YOUR
SEAL END AND THE
NEXT BEGINS?

THERE IS NO ESTABLISHED
STANDARD OF CARE

EMERGING
TECHNOLOGIES

A screenshot of a Microsoft Excel spreadsheet titled "BLUEBEAM". The spreadsheet contains a table of pipe flow calculations. The table is organized into columns A through K. The first section, labeled "Input", includes fields for Upstream Pipe Invert (146.86), Downstream Pipe Invert (95.51), Pipe Length (700 feet), Pipe Diameter (16 inches), and Roughness (0.013). The second section, labeled "Output", includes fields for Pipe Slope (7.34%), Pipe Radius (0.66667 feet), Full Pipe Hydraulic Radius (0.33333), Full Pipe Flow Capacity (20.84 cubic feet per second (cfs)), and Full Pipe Flow Velocity (14.93 feet per second (fps)). The spreadsheet also includes a formula for Area / Perimeter (0.33333) and a note about Alt Flow Capacity comp using velocity (20.84621).

	A	B	C	D	E	F	G	H	I	J	K
1		Input	Units								
2		Upstream Pipe Invert	146.86								
3		Downstream Pipe Invert	95.51								
4		Pipe Length	700	feet							
5		Pipe Diameter	16	inches							
6		Roughness (based on Pipe Material)	0.013		(Assume 0.013 per DPWT Design Manual 6-27)						
7		Output									
8		Pipe Slope	7.34%								
9		Pipe Radius	0.66667	feet							
10		Full Pipe Hydraulic Radius (area/perimeter = radius/2)	0.33333								
11		Full Pipe Flow Capacity	20.84	cubic feet per second (cfs)							
12		Full Pipe Flow Velocity	14.93	feet per second (fps)							
13											
14											
15											
16											
17											

UNDERSTAND YOUR
TOOLS, THEIR LIMITS,
AND THEIR USES

TROUBLE

AND TIPS FOR STAYING OUT OF IT



GET YOUR CPC CREDITS, AND DON'T LIE ABOUT IT



WORK UNDER
UNAMBIGUOUS WRITTEN
AGREEMENTS



DO WHAT YOU KNOW
PRACTICE ONLY IN AREA OF
COMPETENCY



MAINTAIN THE DISCIPLINES OF
GOOD BUSINESS PRACTICES



CONFLICTS OF INTEREST





CONFLICTS OF INTEREST



WHEN IN DOUBT
DISCLOSE

A CONVERSATION
ON NAVIGATING
EVERYDAY
ETHICAL ISSUES
IN ENGINEERING
AND SURVEYING
PRACTICE

KEEPING YOUR LICENSE YOUR INTEGRITY AND YOUR SANITY

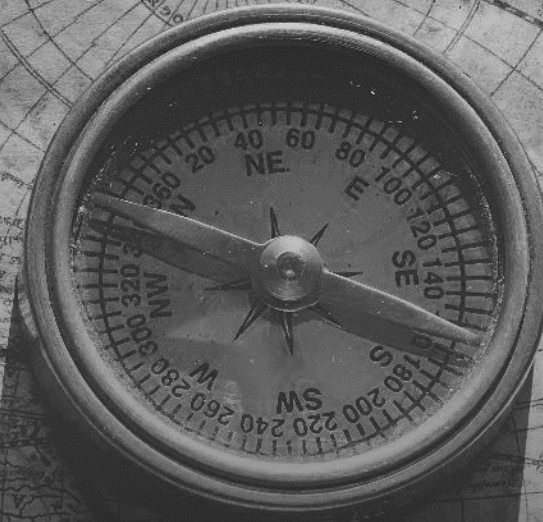


IN
CLOSING

ETHICS • TRUST • SUCCESS

A CONVERSATION
ON NAVIGATING
EVERYDAY
ETHICAL ISSUES
IN ENGINEERING
PRACTICE

KEEPING YOUR LICENSE YOUR INTEGRITY AND YOUR SANITY



BY

ANDREW BROWN, PE

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QUESTIONS?

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