



2026 CEO Conference

Session 7 Part 1: Technology Trends in AEC

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Technology & Innovation

Thursday, October 1, 2026

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Experience

Partner

Technology and Innovation
EFCG

Chief Executive Officer
EcoLucid

Founder and Chief Executive Officer, Board Member
OptiRTC, Inc.

Principal, Board Member (2011-2012)
Geosyntec Consultants

Woodward Clyde / URS / AECOM

Education

M.S., Civil Engineering
Oregon State University

B.S., Engineering & Environmental Science
University of Notre Dame

EFCG Technology Practice

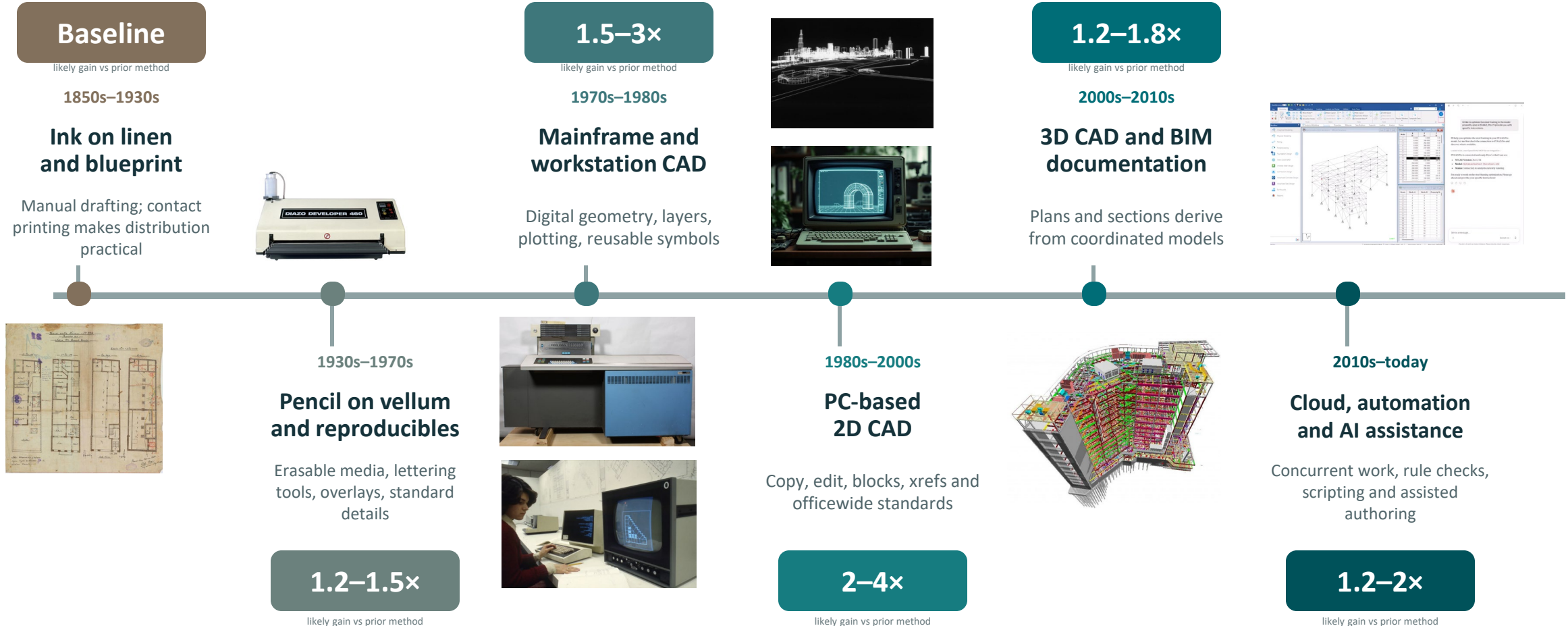
Technology Advisory

Tech Investment Benchmarking and Strategy
Market Analysis and Technical Due Diligence
Innovative Business Model Partner
Knowledge Management and IP
Technology Organization Design
AI Workforce Resilience



We have always been evolving: Engineering design plan sheet production 1850-present

Each transition reduced the labor needed to create, revise, coordinate, and issue drawings

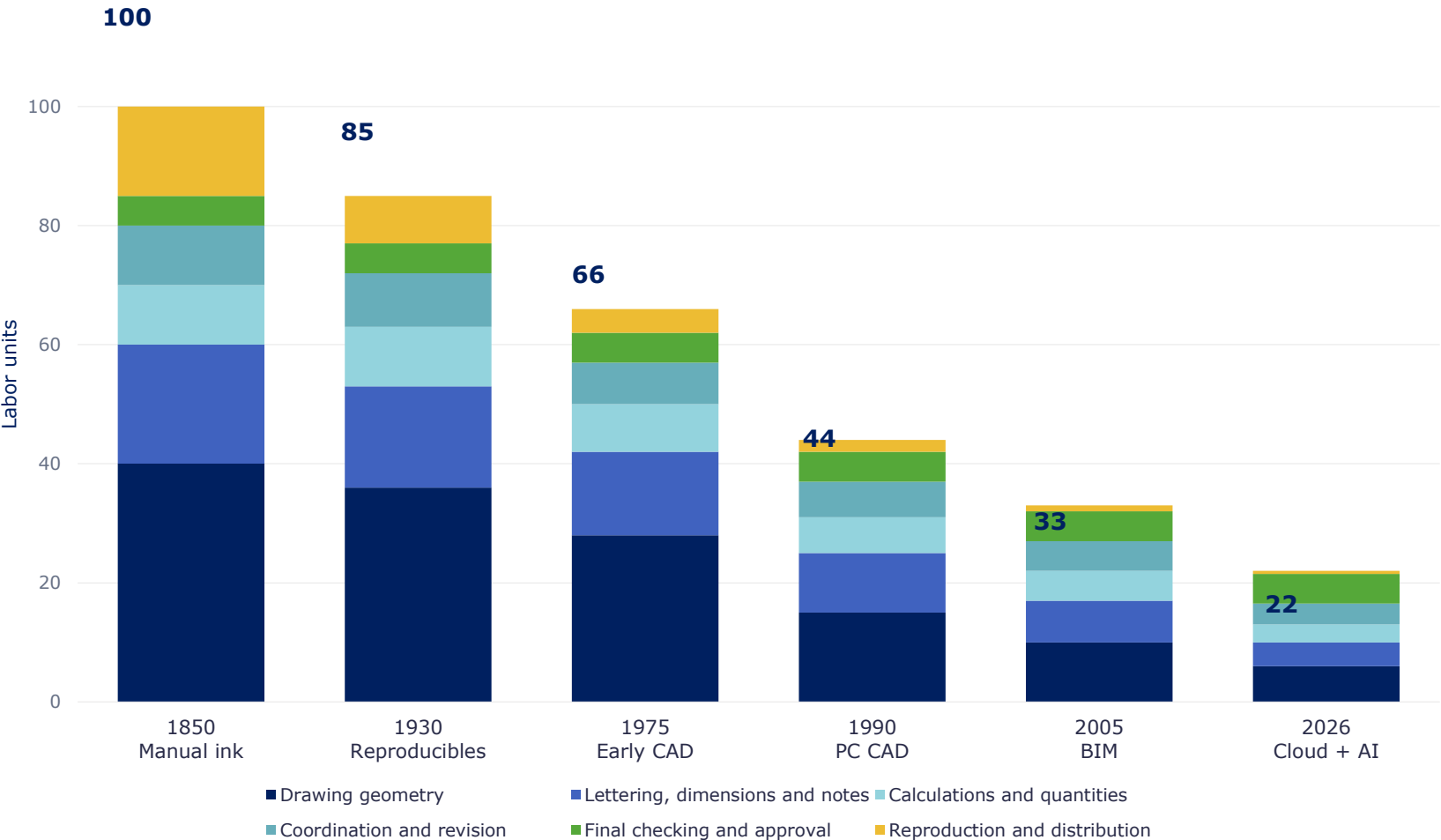


Ranges are directional estimates for sheet-production labor on repeatable work. Results vary by discipline, project complexity, standards, and model maturity.

Plan production labor declined an estimated 78% since 1850 for Comparable Plan Set



Modeled labor index with the 1850 manual workflow set to 100



What changed

Mechanical production declined fastest

Geometry, annotation, reproduction and routine calculations account for most of the modeled reduction.

Review became a larger share

Final checking remains near five labor units, increasing from 5% to 23% of the total workflow.

22 labor units

Modeled 2026 total

Note: Estimate for a comparable plan set. Actual modern projects typically contain more information and coordination.

The pace is the opportunity and the challenge

2026
4.8% → **> 10%** 2031
of net revenue spent on IT
median, currency-neutral

doubling of
total IT spend over the next 5 years

2026
2.5% → **Flat** 2031
of staff in technology roles
median technology workforce share

gradual decrease in core IT staff and
increase in applied technology, cyber
and embedded technology specialists
throughout firms

2026
35.6% → **100%** 2031
of employees use generative AI
mean across firms, 2026

upskilling the broad workforce remains
the primary challenge.
consider budgeting for 5% super users,
15% power users, 80% users

Firms will increasingly
compete on **complexity**,
quality, **speed**, and **volume**
as tasks, jobs, and skills evolve

**We anticipate these
demands will outpace
efficiency gains**

However; those elements of
value that cannot be
automated
will gain elevated
importance:

**Relationships, trust,
reliance, decision making,
and taking responsibility**

The Pace of Change

Putting change in Context

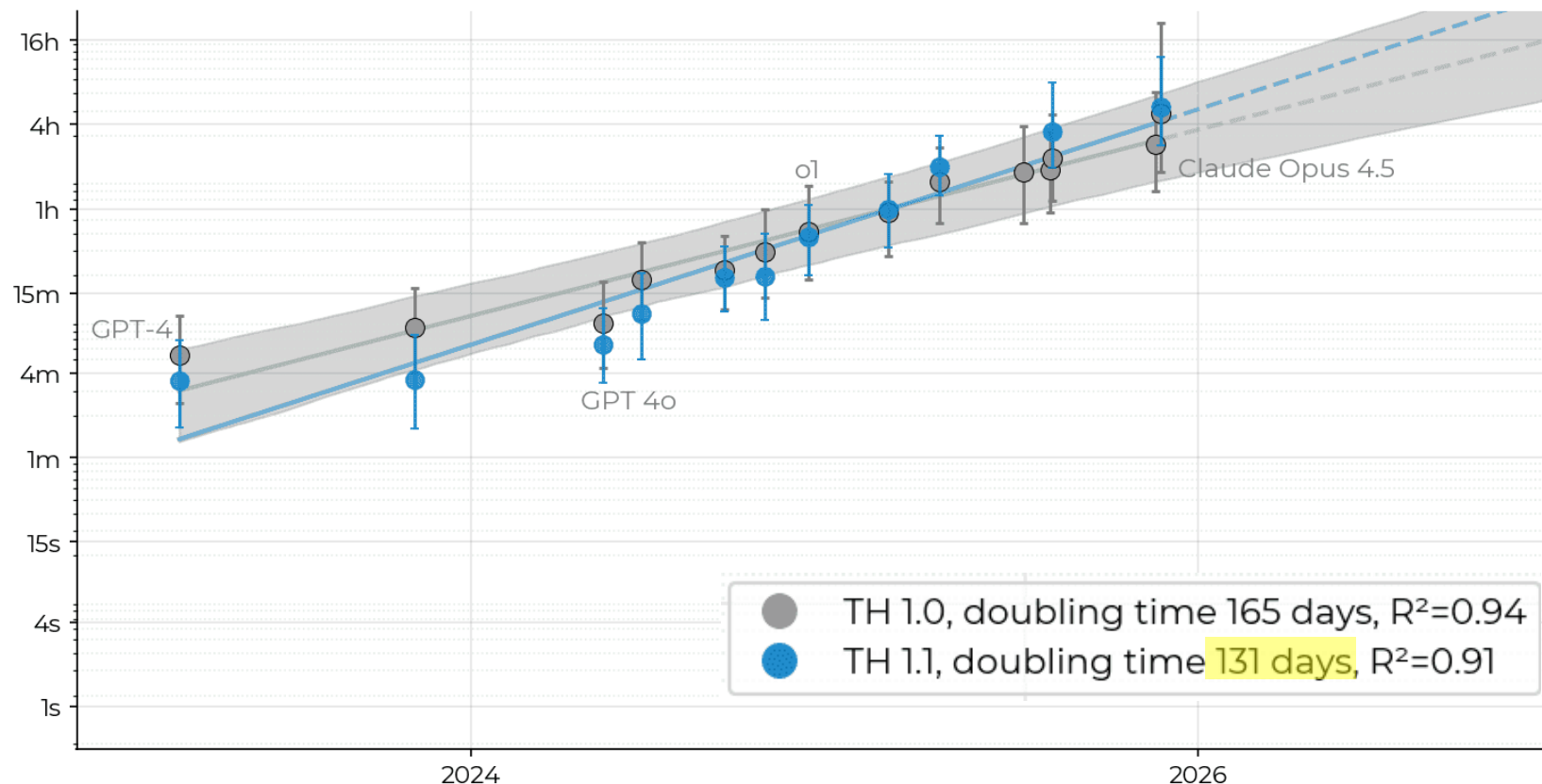


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Technology continues to accelerate

The **doubling time** of LLM model capability is now around **131 days**

Task length (at 50% success rate)



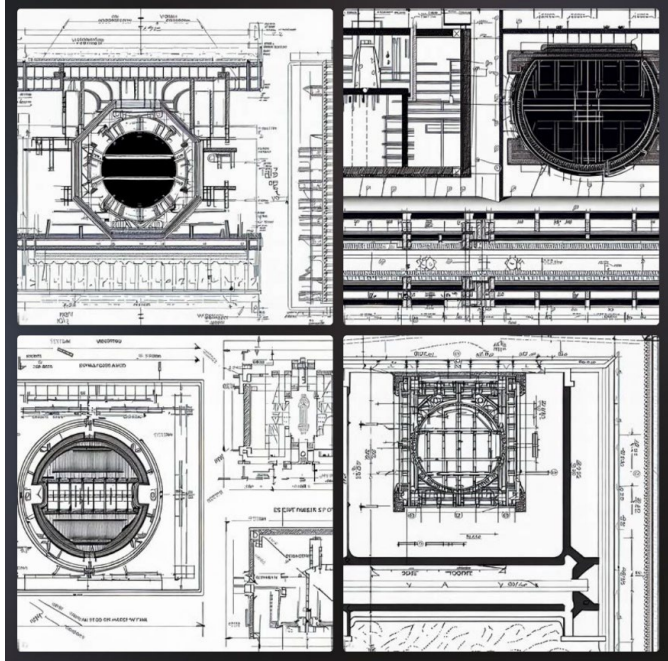
CC-BY

Model release date

metr.org

How can we see this change?

EFCG has been running the same zero-shot text-to-image prompt for the past three years

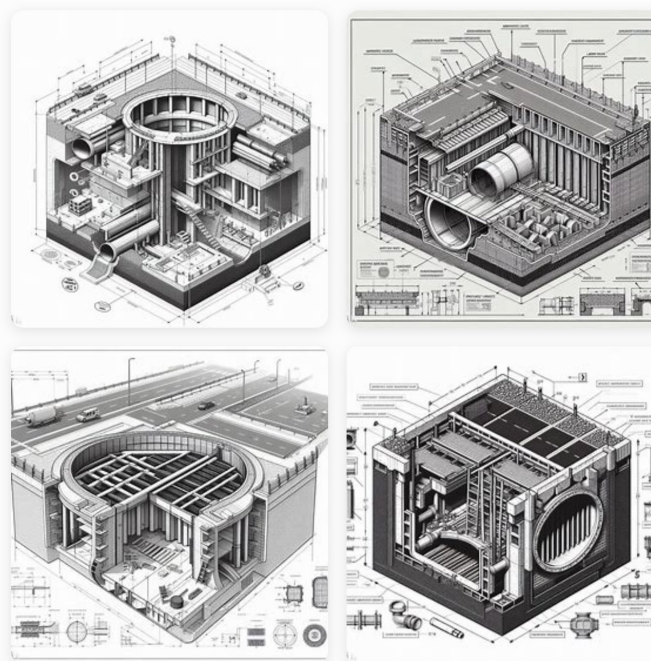


MSIC Prompt (DALLE 1):

Create a detailed black and white CAD drawing for a cross-sectional view of a stormwater manhole in a highway setting, including accurate dimensions, materials, and components, such as manhole cover, frame, precast concrete sections, ladder rungs, channel, and pipe connections.

Ensure to follow standard CAD conventions and incorporate relevant construction and engineering symbols.

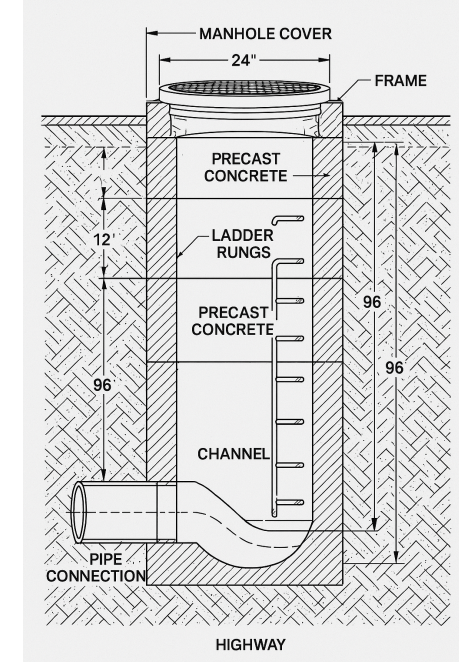
July 2023



Bing Chat Enterprise Prompt (DALLE 2):

Create a detailed black and white CAD drawing for a cross-sectional view of a stormwater manhole in a highway setting, including accurate dimensions, materials, and components, such as manhole cover, frame, precast concrete sections, ladder rungs, channel, and pipe connections. Ensure to follow standard CAD conventions and incorporate relevant construction and engineering symbols.

October 2023



ChatGPT 4o Multimodal (DALLE 3):

Create a detailed black and white CAD drawing for a cross-sectional view of a stormwater manhole in a highway setting, including accurate dimensions, materials, and components, such as manhole cover, frame, precast concrete sections, ladder rungs, channel, and pipe connections. Ensure to follow standard CAD conventions and incorporate relevant construction and engineering symbols.

March 25, 2025

SECTION A-A

Typical 48" ID Storm Sewer Manhole - Highway Setting

Diagram labels and dimensions:

- FG EL. 0.00
- CAST IRON COVER (2" THK)
- CAST IRON FRAME
- CONCRETE ADJ. RINGS (4" TYP)
- CAST IRON RUNGS (16" O.C.)
- 48" ID
- 5" WALL
- PRECAST CONCRETE (ASTM C478)
- GASKETED JOINT (TYP)
- BENCH SLOPE TO CHANNEL
- 18" DIA PIPE
- FLEX CONN.
- FLOW
- 18" PIPE (RCP/HDPE)
- 48" BASE
- 36" RISER
- 48" RISER
- 24" CO.
- LIMIT OF EXCAVATION (TYP)
- SUBGRADE
- 8" AGG BASE (TYP)
- 4" HMA (TYP)
- 12'-0" TO INVERT
- COMPACTED BACKFILL
- I.C.L.

GENERAL NOTES

- Cover & frame: cast iron, heavy duty (traffic rated).
- Set top of cover flush with finished pavement grade.
- Precast concrete sections per ASTM C478 (min 4,000 psi).
- Joints sealed with butyl mastic or EPDM gasket; exterior wrap as specified.
- Ladder rungs: polypropylene-coated steel, 16" wide @ 12" O.C.; first rung ~18" below cover.
- Form flow channel; bench slope to channel (min 1/2" per ft).
- Pipe connections: watertight flexible connector boot (ASTM C923) and non-shrink grout.
- Compact backfill in lifts to 95% standard Proctor (or per specs).
- Provide bedding and embedment for pipe per standard details/specifications.

TYPICAL STORMWATER MANHOLE (HIGHWAY) - CROSS SECTION

Black & White CAD Detail - Model Units: inches

Verify dimensions/materials with local DOT standards and project specifications.

DWG NO.
SW-MH-XS-01

SCALE
Approx. 1" = 23"

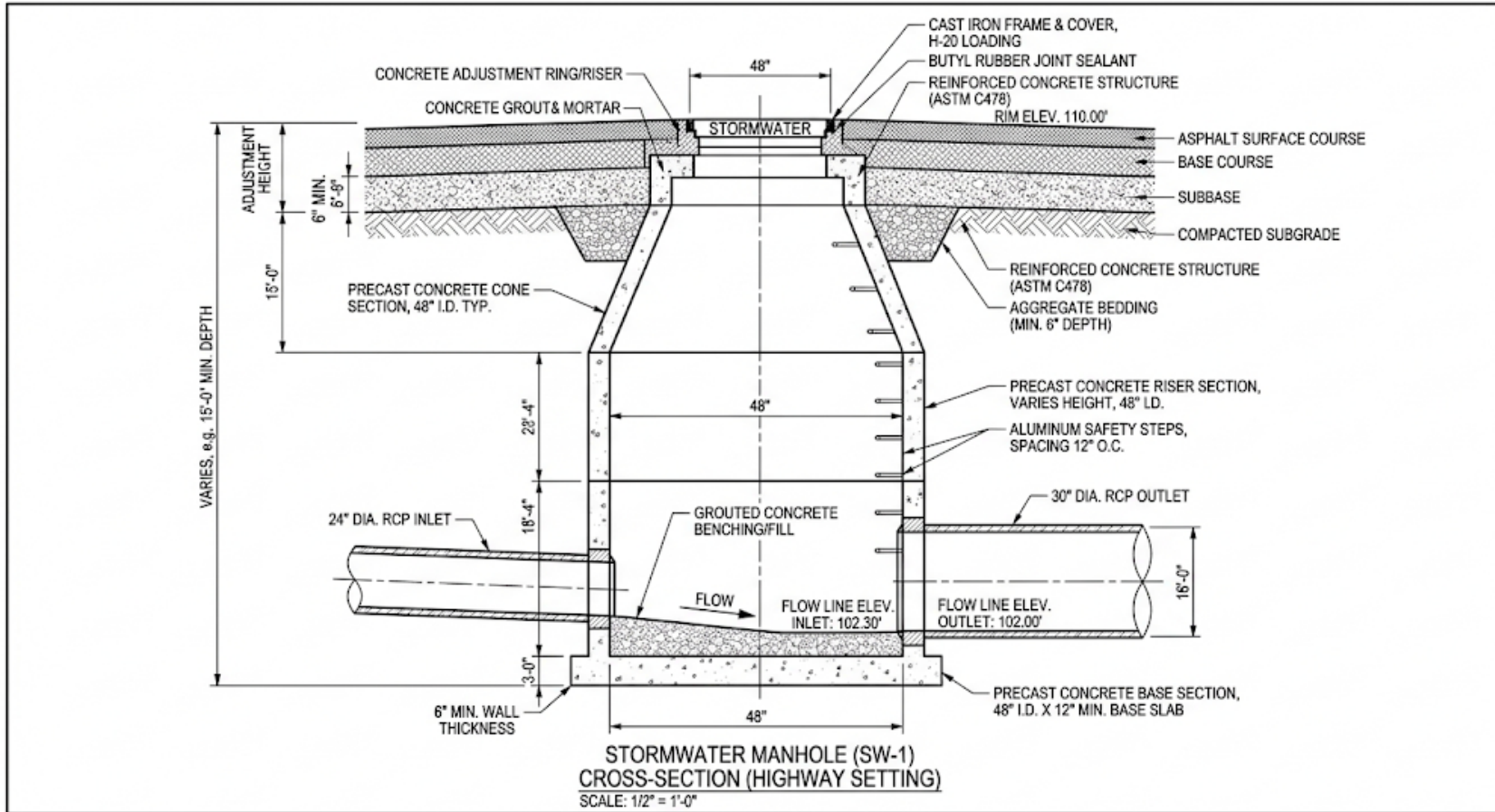
DATE
2025-12-17

SHEET
1/1

Create a detailed black and white CAD drawing for a cross-sectional view of a stormwater manhole in a highway setting, including accurate dimensions, materials, and components, such as manhole cover, frame, precast concrete sections, ladder rungs, channel, and pipe connections. Ensure to follow standard CAD conventions and incorporate relevant construction and engineering symbols.

December 17, 2025

How quickly are these tools changing?

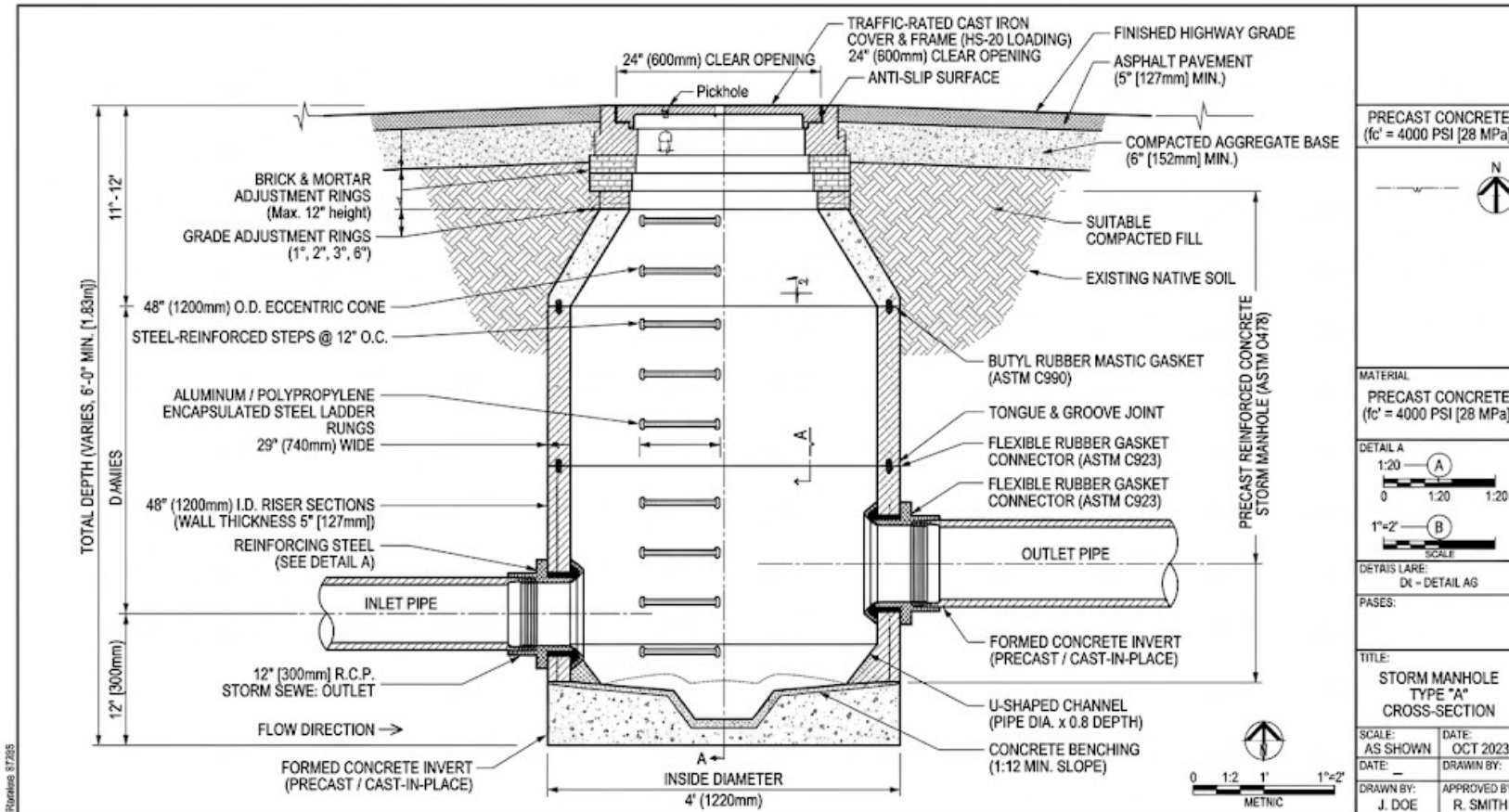


Gemini Pro

Create a detailed black and white CAD drawing for a cross-sectional view of a stormwater manhole in a highway setting, including accurate dimensions, materials, and components, such as manhole cover, frame, precast concrete sections, ladder rungs, channel, and pipe connections. Ensure to follow standard CAD conventions and incorporate relevant construction and engineering symbols.

April 1, 2026

How quickly are these tools changing?



Gemini Pro Nano Banana Pro

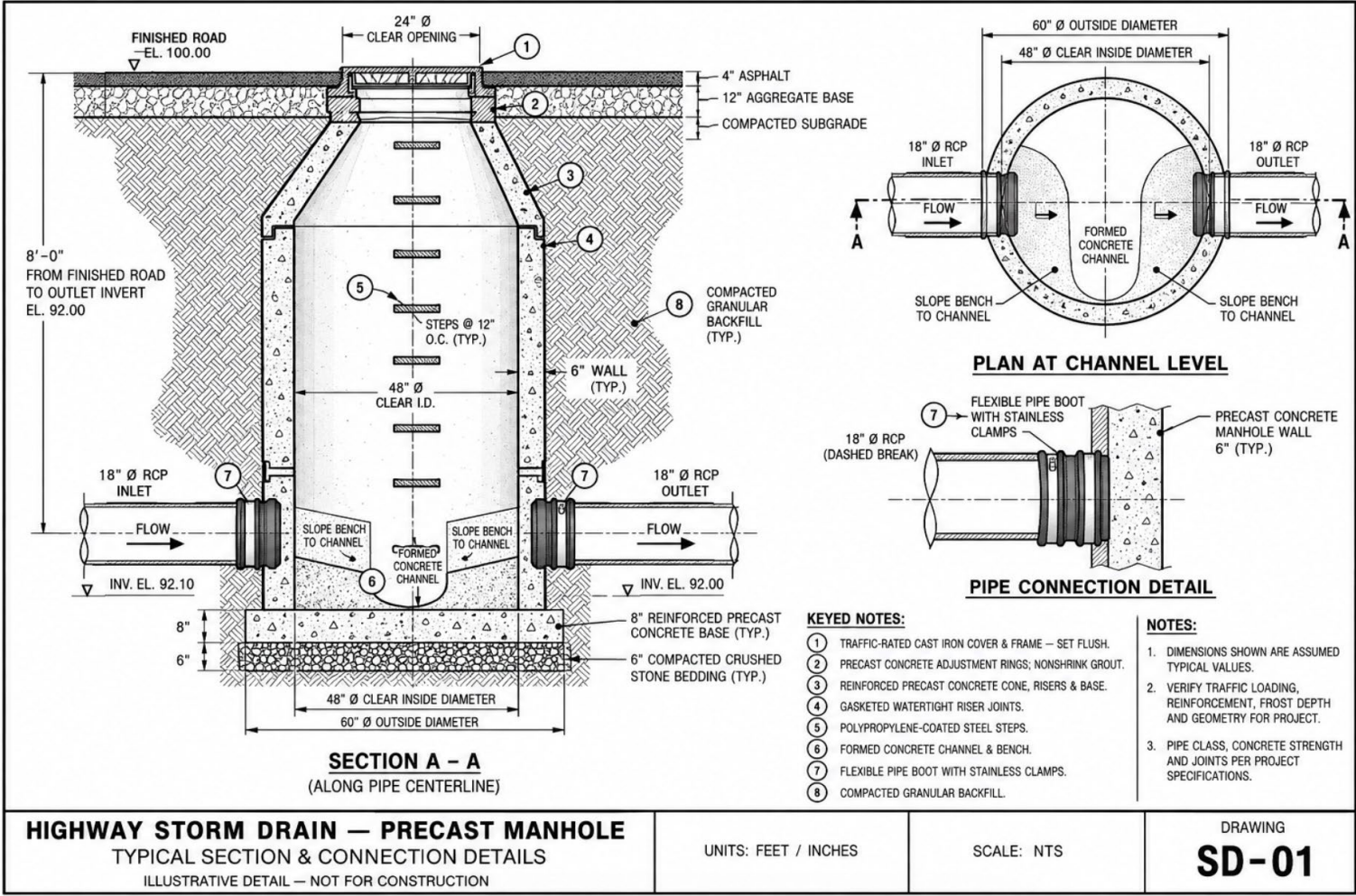
Create a detailed black and white CAD drawing for a cross-sectional view of a stormwater manhole in a highway setting, including accurate dimensions, materials, and components, such as manhole cover, frame, precast concrete sections, ladder rungs, channel, and pipe connections. Ensure to follow standard CAD conventions and incorporate relevant construction and engineering symbols.

Sept 27, 2026



This version is specifically designed for high-fidelity technical diagrams, precise in-image text labeling, and structured CAD/schematic layouts.

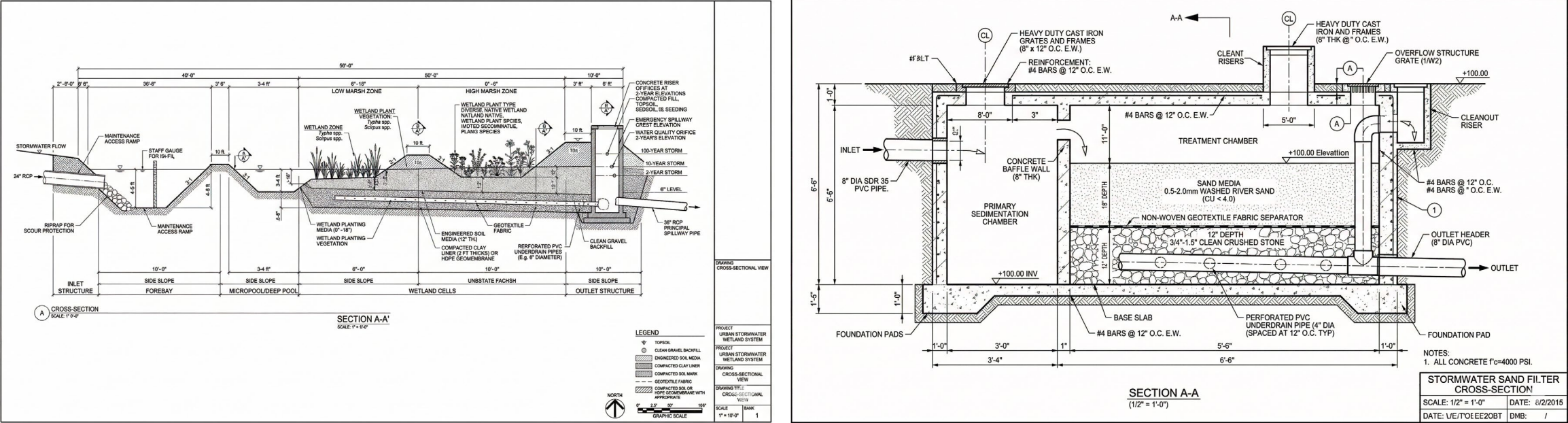
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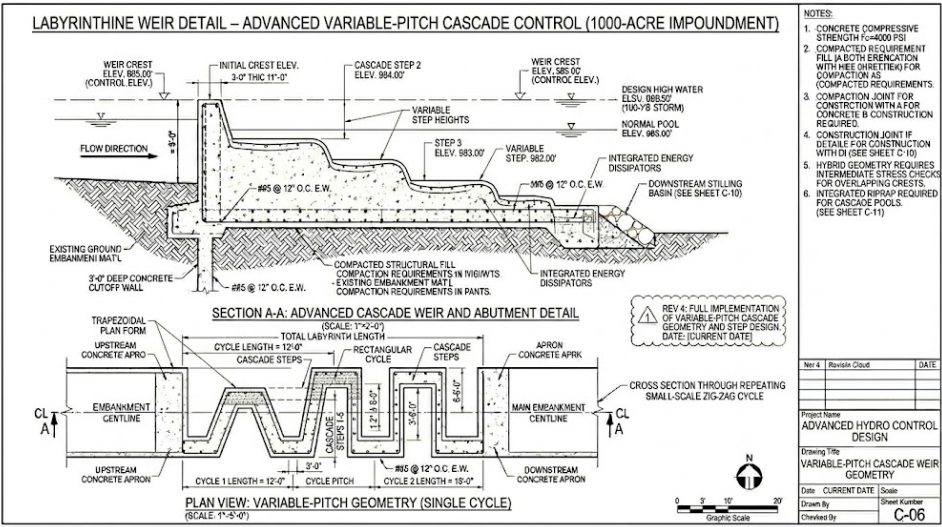
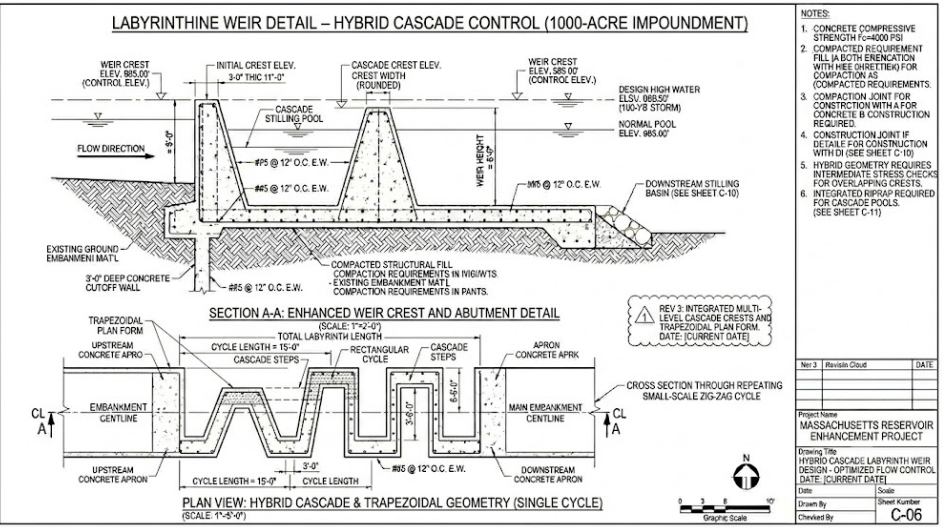
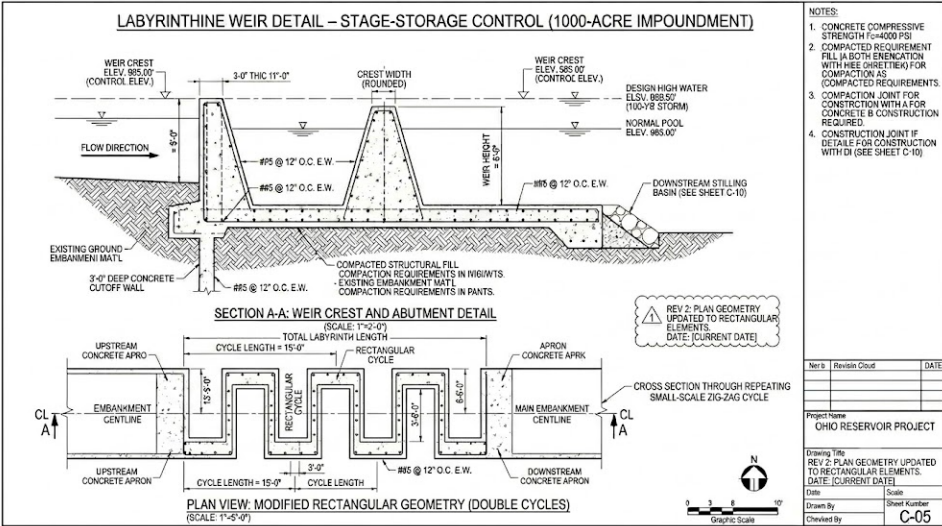
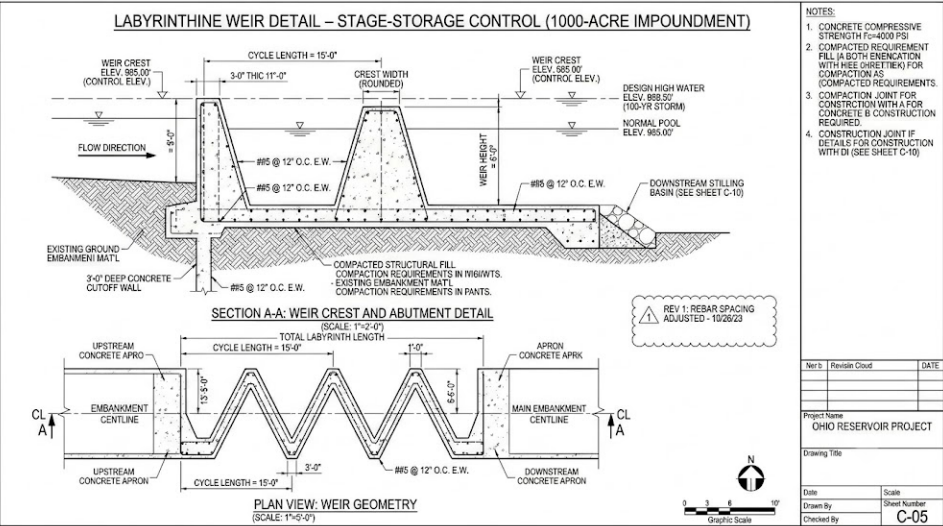


GPT-6 Astra Medium

Create a detailed black and white CAD drawing for a cross-sectional view of a stormwater manhole in a highway setting, including accurate dimensions, materials, and components, such as manhole cover, frame, precast concrete sections, ladder rungs, channel, and pipe connections. Ensure to follow standard CAD conventions and incorporate relevant construction and engineering symbols.

Sept 27, 2026





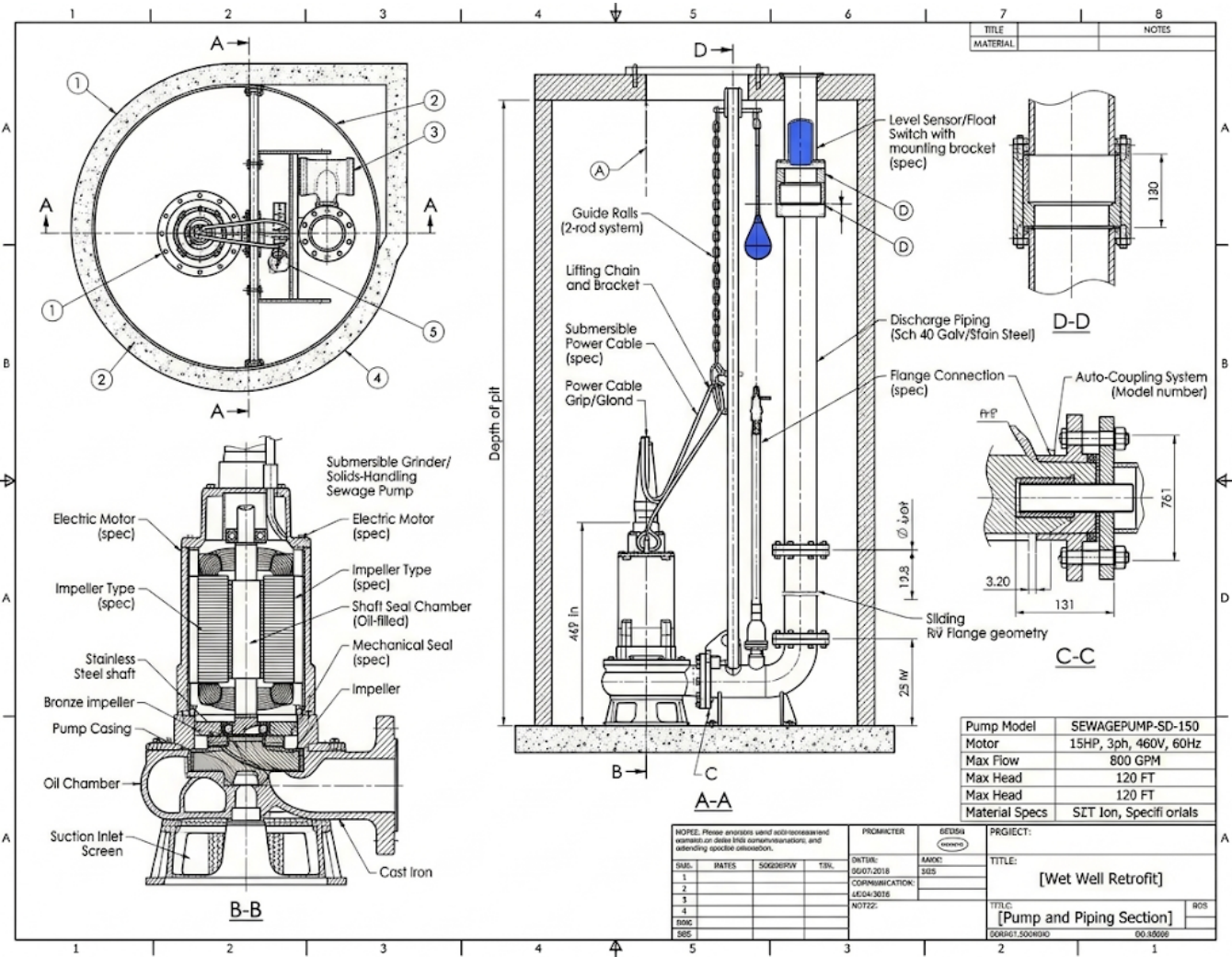
and capabilities to support new and novel workflows



Field Photo

Prompt 1:

Can you create an image in the style of a CAD drawing for this pump set. Include as many details as possible. You may need to write a spec first and then use that to generate the plan. I would like the drawing to show a cross section. Do research as needed before starting image gen.



Sept 27, 2026 - Gemini Pro
Nano Banana Pro

Impacts on the Business Model



EFCG

How is AI Changing the AEC Industry?

Three response modes frame how AI is reshaping AEC, and each demands a different strategy.

Commoditization	Acceleration	Resilience
AI introduces significant efficiencies and clients may be unwilling to pay more for additional value. Speed and quality stop being differentiators, procurement compares outputs, and falling cost to produce shows up as falling price. Strategy: specialize, integrate delivery, own the data, reprice, or deprecate services entirely.	Where a firm already holds real differentiation or share, AI further increases an existing advantage. Added complexity, quality, volume or speed creates new value the client will pay for. Strategy: increase rates and price on value; sell complexity, speed, volume and quality; reinvest freed capacity into wins.	AI has little impact on the efficiency of the service, as a person still has to perform the task, or the firm holds data no one else can rebuild. Field execution, licensure and liability sit at the center. Strategy: expand market share and pursue top-line growth; multiply the constrained senior bench.
Defend margin.	Defend and expand.	Where growth comes from. Fund it.

Each service line's diligence comes from four assessed dimensions:

AI-addressable workflow mix	Client savings	AI value-creation headroom	Structural defensibility
Share of the line's fee-earning workflow AI can compress today	How much of the gain the client takes back in lower fees	Room to create new value through complexity, quality, volume, speed	Durability of the moat: field work, licensure, data, incumbency

Who Keeps the Efficiency Depends on the Contract

On time-and-materials work, productivity gains transfer to the client by default

1 Raise rates

Requires showing a client that the firm delivers more value than the alternative. Hardest on negotiated public work; most available where the firm is genuinely differentiated.

2 Charge a technology fee

About a third of AEC firms now bill technology explicitly. It is the fastest lever to pull, and it makes the investment visible to the client rather than buried in overhead.

3 Shift the contract mix

Fixed-price, design-build and subscription work let the firm keep what it saves. Design-build also has the property that the construction component is not eroded by AI.

4 Settle the overhead rate treatment

On audited overhead work it is unresolved what AI cost is recoverable. Tokens are a raw material; the value is the expert using them.

For fixed fee projects one, two and four carry nearly all the weight.

Source: EFCG 2026 Technology Leadership Conference Survey; EFCG Technology and Innovation Practice.



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