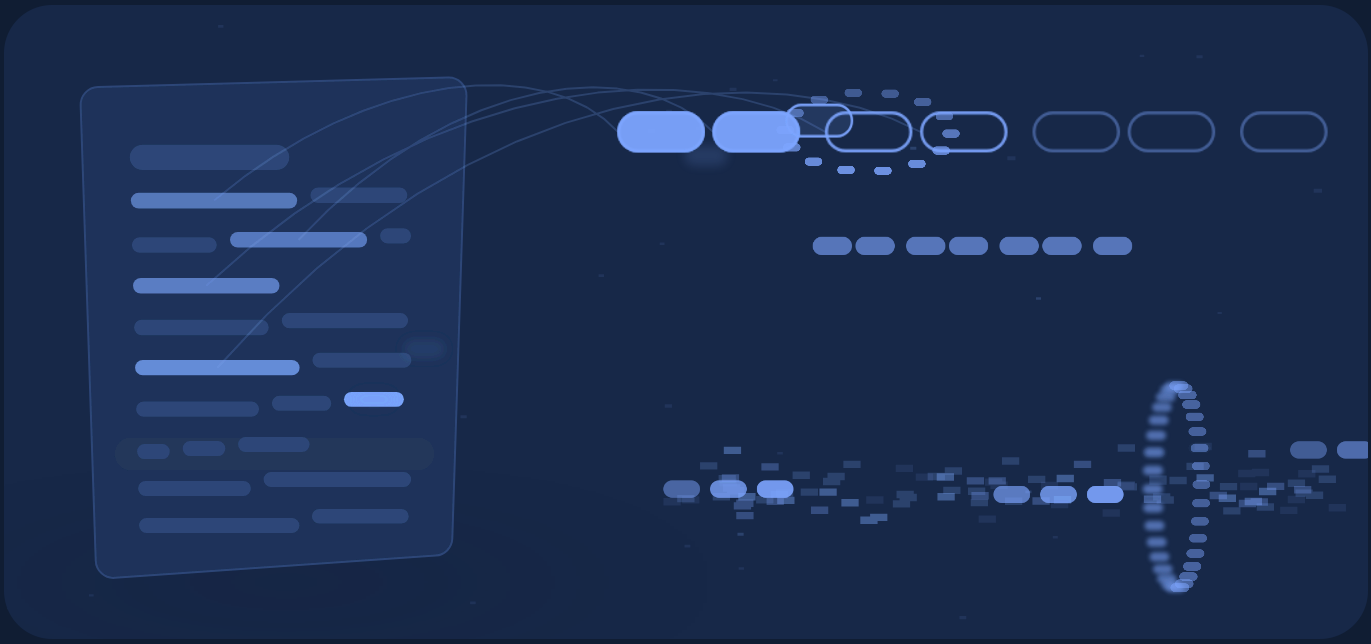
Rillor

METHODS NOTE

Contract obligation tracking: from clauses to a deadline list

How to read each contract clause into a tracked row with its bearer, trigger and consequence, and compute its deadline with the contract's own counting and business day rules.



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Summary

Contract obligation tracking turns clauses into dated rows, and public standards, extraction studies and two credit agreements filed with the SEC show what each row needs for its date to be right.

- A tracked obligation belongs to one party. LegalRuleML, an OASIS standard, defines an obligation by the party bound and the violation a miss causes [1], and in an annotated lease corpus one "shall" gives the lessee an obligation and the lessor an entitlement [26].
- Contract dates come in four kinds: absolute dates, periods anchored to an event, recurring duties and notice windows that close before a term ends [6, 18, 21].
- One contract can state several business day conventions, the rules that move a date falling on a weekend or holiday. A credit agreement filed with the SEC in September 2025 moves payments forward, its maturity date back and interest periods either way, and states none for its reporting deadlines (derived reading) [18].
- Counting from the day after each period ends, three of the four fiscal 2027 reporting deadlines in a credit agreement filed with the SEC in September 2025 fall on a weekend (derived) [18]. The Federal Reserve's holiday table covers 2026 to 2030 only, and its 8 July 2026 update changed a footnote's New Year's Day date [12].
- Renewal terms scored below plain dates in a 2026 extraction study: F1 of 0.571 to 0.667 against 0.773 to 0.884 for effective date across six systems (ranges derived) [30]. On renewal notice periods the sources disagree, near zero for two models in a 2025 benchmark [29] and 0.750 to 1.000 in the 2026 study [30].
- Date arithmetic belongs in code. Three model families scored 13.50% to 16.00% on date durations in a 2024 benchmark, with a one-day miss the most common error [32], and a model's worked answer that a 2025 paper calls correct skips 29 February 2024 (derived) [31].
- Consequences and amendments are rows too. In a credit agreement filed with the SEC in September 2025, a missed report left uncured becomes an Event of Default 30 days after notice, or up to 60 for a failure that takes longer to cure (derived reading) [18], and a 2026 amendment resets another agreement's maturity to the fifth anniversary of 27 August 2026 [20].

Background

Contract obligation tracking keeps a list of what each party must do under its contracts, and by when. Chalkidis and colleagues extracted contract elements partly to "notify clients when contracts they are involved in are about to become effective or terminate" [24], and later studied obligations for firms that "process large numbers of contracts to monitor the compliance of each party" [25].

The hard part sits between the clause and the calendar. CUAD's contracts run "from a few pages to over one hundred pages", and about 0.25% of each contract is highlighted for any one label [23]. A deadline can depend on a defined term such as "Business Day", a counting rule and a later amendment. A study of long inputs found that performance "significantly degrades" when the relevant information sits in the middle of the context [33]. The application to contracts is an inference: a clause and the definitions it uses belong in the same input.

Regulation S-K requires registrants to file as exhibits the material contracts not made in the ordinary course of business [19], so public contracts exist for testing, and EDGAR full-text search covers filings since 2001, exhibits included [22]. This note is for contract managers, legal operations and finance teams, and for engineers building trackers with LLM extraction. It is research, never legal advice, and it does not say how a court would read any clause.

Method

What was examined. Each step from a clause to a dated row: deciding which party a clause binds, filling the row's fields, computing the date under the contract's counting, business day and roll rules, and checking the result against the clause.

Worked material. A credit agreement filed with the SEC in September 2025 as Exhibit 10.1 to a Form 8-K [18], a first amendment to a different credit agreement filed in August 2026 [20], and the Common Paper Cloud Service Agreement 3.0, a standard form under CC BY 4.0 [21]. The 45-day reporting clause is common: an EDGAR full-text search run in November 2026 found 346 Form 8-K documents filed from 1 June 2025 to 31 October 2026 with its wording and the term "Business Day" [22, 34].

Sources. Thirty-four sources, each opened and read for the passages cited: 9 standards and data models, 7 statutes, rules and official tables, 3 data services, 2 filings and a standard form, and 12 research papers. Three of the papers come from company teams, one of them a model maker's [30, 31, 32], and four more have company co-authors [24, 25, 26, 27].

How. Dates were computed on the Gregorian calendar. "Derived" marks arithmetic on, or a reading of, a source's own text. Periods "within N days after" an event exclude the event day, as FRCP 6(a)(1)(A) does for court deadlines [14], since the agreement states no convention for that phrase (derived reading) [18]. Federal holidays come from 5 U.S.C. 6103 and the Federal Reserve's table [11, 12]. State bank holidays were not checked. No product or model is named or ranked.

Where sources disagree. ContractEval reports near-zero scores on CUAD's renewal notice category [29], and the 2026 study reports F1 of 0.750 to 1.000 on its renewal notice period field (range derived) [30]. Contracts, field definitions and matching differ, so both are reported.

Findings

1. What counts as a contract obligation: modality per party

LegalRuleML defines an obligation as "a Deontic Specification for a state, an act, or a course of action to which a Bearer is legally bound, and which, if it is not achieved or performed, results in a Violation" [1]. A prohibition reverses it. The bearer is the role a specification is "primarily directed" at, and an auxiliary party a role it is "related" to [1].

Modality is per party. LEXDEMOD annotates English contracts "with deontic modality expressed with respect to a contracting party or agent", and its example reads "'shall' triggers obligation for Lessee and entitlement for Lessor" [26]. Its 7,092 sentences from 23 leases carry six types: obligation, entitlement, prohibition, permission, no obligation and no entitlement [26]. "Shall" made up 44.6% of the triggers and expressed four of the six, and 24.8% of sentences expressed no type for a given party [26]. The same authors built about 293,000 sentence pairs for party-specific summaries, since "the key rights and duties requiring review vary for each contracting party" [27]. A tracker keeps one row per party and duty.

2. The fields of a tracked obligation

Published models agree on the core of a row.

Field	Where a published model defines it
Bearer and counterparty	LegalRuleML bearer and auxiliary party [1], Accord Project promisor and promisee [4]
Action	ODRL duty, "the obligation to exercise an action" [2]
Trigger	ODRL event and delay period [3], Symboleo antecedent [5]
Deadline	Accord Project "The time before which the obligation is fulfilled" [4], ODRL dateTime [3]
Recurrence	ODRL timeInterval, "a recurring 7 day period" in its example [3]
Consequence	ODRL consequence and remedy [2], LegalRuleML penalty and reparation [1]
Source	Accord Project "A back reference to the governing contract that emitted this obligation" [4]

Symboleo, a specification language for contracts, gives each obligation an antecedent and a consequent, and defines powers that let a role "instantiate, change, suspend, or terminate obligations" [5]. In early experiments asking an LLM to write Symboleo from contracts with 38 prompt combinations, grammar,

environment variable and syntax errors made up 49% of the violated metrics [5].

Nested clauses need their lead-in. In 9,400 sections (derived from 6,385 training, 1,595 development and 1,420 test) of 100 service agreements, labeled with separate classes for obligation lists because "nested clauses are frequent", a flat model scored test F1 of 0.57 on obligation list items and a hierarchical one 0.89 [25]. LEXDEMOD joins each sub-bullet with "its context in the main bullet" [26]. A row read from item (b) carries the bearer and verb of its lead-in.

3. Four kinds of contract date

TimeML, an annotation standard, types time expressions as DATE, TIME, DURATION or SET, and calls expressions ordered by words such as "after" or "prior to" "anchored durations" [6]. Contracts use four kinds of date:

1. **Absolute dates.** The 2025 agreement's maturity date is "September 5, 2032" [18].
2. **Periods anchored to an event.** Quarterly statements are due "within 45 days after the end of each of the first three fiscal quarters" [18], in TimeML terms a duration of P45D anchored to each quarter end [6].
3. **Recurring duties.** "Each" quarter makes the duty a SET [6]. iCalendar writes sets as recurrence rules, and its example for "the last work day of the month" picks the last Monday-to-Friday day [7].
4. **Notice windows.** Common Paper's Order Form sets a "Non-Renewal Notice Date" of "At least [fill in number] days before the end of the current Subscription Period", and the agreement renews unless a party gives notice of non-renewal before it [21].

In Chalkidis and colleagues' words, a generic named entity recognizer "may recognize dates, but without distinguishing between start, effective, termination and other dates" [24]. CUAD keeps Agreement Date, Effective Date, Expiration Date, Renewal Term and Notice to Terminate Renewal as separate labels [23].

The law supplies some dates when a contract is silent. Where a commercial contract fixes no date or period for payment, Directive 2011/7/EU entitles the creditor to late-payment interest after "30 calendar days following the date of receipt by the debtor of the invoice", or after receipt of the goods or services where that date is uncertain or the invoice came first [16], so the tracker needs a receipt date, an event no clause states. The Uniform Commercial Code's text gives an action with no agreed time "a reasonable time" [15], which has no date to compute.

4. Counting rules: inclusive days, months and time of day

The 2025 agreement states its own counting words. Under Section 1.02(b), "from" means "from and including", "to" and "until" mean "to but excluding" and "through" means "to and including" [18]. Section 6.14 requires a hedge of at least 50% of the loans' floating interest expense "as of the Closing Date until September 1, 2030", so the duty runs to but excluding 1 September 2030 (derived reading) [18]. The reporting covenants say "within 90 days after" and "within 45 days after", phrases 1.02(b) does not name (derived reading) [18].

The Federal Rules of Civil Procedure write a full convention for court deadlines: exclude the trigger day, count every day, include the last, and run past a last day that is a Saturday, Sunday or legal holiday to the next day that is none of those [14]. The rule governs court deadlines only. It lists the questions a contract's convention answers.

Months are not fixed day counts. XML Schema 1.1, whose durations ODRL requires for delay periods [3], states that "P1M is incomparable with P31D" [9]. A month sum that overruns "is pinned to be within range. Thus April 31 turns into April 30" [9].

Time of day is part of the deadline. Payments the agent receives after 12:00 noon count as received the next Business Day, and a fax or e-mail notice sent outside the recipient's normal business hours counts as given at the opening of business on the next business day, while hand, courier and mailed notices count when received [18]. The amended agreement attached to the 2026 amendment requires a dollar Term Benchmark borrowing request by 1:00 p.m. Local Time, which is New York time for dollars, three Business Days before the borrowing [20]. Common Paper counts a notice as given on confirmed delivery, or two days after mailing by overnight commercial delivery [21].

5. Business days, holiday calendars and time zones as versioned inputs

The contract defines its business day. In the 2025 agreement it excludes weekends and days on which commercial banks "are authorized to close under the Laws of, or are in fact closed in, the state where Administrative Agent's Office is located" [18]. The term is defined twice, with different provisos for Term SOFR [18].

Holiday sources differ by institution and change. 5 U.S.C. 6103 lists 11 legal public holidays (counted), and for the pay and leave of employees with a Monday to Friday workweek, the Friday before a Saturday holiday is the holiday [11]. For a Saturday holiday, the Federal Reserve Banks open on the Friday before while the Board of Governors closes, and for a Sunday holiday all Federal Reserve offices close the next Monday [12]. The table covers 2026 to 2030 only, and on 8 July 2026 its first footnote was updated to move a New Year's Day observance from 31 December 2028 to 31 December 2027 [12]. Labor Day 2032, needed for the 2025 agreement's maturity, comes from the statute's rule: 6 September 2032 (derived) [11].

Time zones change by political decision. IANA's database tracks "changes made by political bodies" to offsets and daylight saving rules [13]. Release 2026f, of 27 October 2026, keeps Cuba on UTC-4 through 7 November 2027 in place of a fallback on 1 November 2026, five days later (derived) [13]. RFC 9557 keeps the zone name in a timestamp: programs "MUST NOT copy the UTC offset from a timestamp into an offset time zone", and adding six months from 1 January 2020 with a fixed +01:00 offset in place of Europe/Paris gives a result off by one hour [8].

A tracker stores the calendar it used: the business day definition, the holiday table and its version, and the zone name.

6. Roll conventions: following, modified following, preceding and none

FpML's schema defines a business day convention as "The convention for adjusting any relevant date if it would otherwise fall on a day that is not a valid business day" [10]. FOLLOWING moves to "the first following day that is a business day". MODFOLLOWING does the same unless that day "falls in the next calendar month", then takes the first preceding business day. PRECEDING moves back, and NONE leaves the date unadjusted [10].

The 2025 agreement uses three behaviours and leaves one set of deadlines with none (derived count) [18]:

Date	Rule stated in the agreement	FpML equivalent (derived)
Payment due on a non-business day	"payment shall be made on the next following Business Day", with the extension counted in interest and fees	FOLLOWING
Maturity date	"the next preceding Business Day"	PRECEDING
End of an interest period	"the next succeeding or next preceding Business Day, as determined by the Administrative Agent in its sole discretion"	None fixed in advance
Reporting deadlines in 6.01	No rule stated	None stated

The phrases "not a Business Day" and "other than a Business Day" appear only in the provisions behind the first three rows (derived by a search of the exhibit's text) [18].

The maturity date, 5 September 2032, is a Sunday (derived) [18]. Preceding gives Friday 3 September, and following would pass Labor Day, Monday 6 September, to Tuesday 7 September (derived) [11, 18]. The guarantor's fiscal year ends on 30 September (derived from the agreement's definitions) [18], so the deadlines for fiscal 2027's quarters fall on Sunday 14 February, Saturday 15 May and Saturday 14 August 2027, and the annual one on Wednesday 29 December 2027 (derived). Moving 14 February forward would also pass Washington's Birthday, Monday 15 February 2027, on the Federal Reserve's table [12]. The text does not say whether a weekend deadline moves. The tracker records "no rule stated" for a person to resolve, never a convention chosen by code.

7. Renewals and notice windows

For an automatic renewal, the date to track is the last day to give notice, which comes before the term ends. Common Paper's annotation describes its notice date as "a set time period before the renewal date (e.g., 30 days before the end of the Subscription Period)" [21]. CUAD keeps the questions apart: Renewal Term

"includes automatic extensions and unilateral extensions with prior notice", and Notice to Terminate Renewal asks "What is the notice period required to terminate renewal?" [23].

ContractEval tested 19 LLMs on CUAD's 41 categories, and in its comparison of one proprietary and one open-weight model, "both models show near-zero scores" in rare categories including "Notice Period to Terminate Renewal" [29]. In a 2024 study, a general-purpose chat model read "This Agreement shall be in effect until March 18. 2021, unless sooner terminated by either party upon (30) days written notice, without cause." The date "is not captured by any norm", and the 30-day notice "is also lacking from all extracted norms" [28]. In the 2026 study, six systems scored F1 of 0.571 to 0.667 on renewal term and 0.606 to 0.765 on termination notice window (ranges derived) [30]. Its renewal notice period field, which the authors call "less prevalent", scored 0.750 to 1.000 (range derived) [30].

8. Consequences, cure periods and default chains

A missed duty starts another row. In the 2025 agreement, unpaid interest becomes an Event of Default if not paid "within five days after the same becomes due", and other amounts when the failure "continues for 10 days after notice" [18]. Covenants not listed in 8.01(a) or (b) fall under 8.01(c): a failure becomes an Event of Default when it "continues for 30 days after notice of such failure is given to Borrower by Agent or any Lender", or, for a failure curable but not within 30 days with due diligence, when the Loan Party fails to proceed promptly with the cure, "but in any event within 60 days" [18]. Section 6.01 is not among the covenants 8.01(b) lists, so a late report starts a 30-day clock anchored to the notice, a separate event the tracker records (derived reading) [18]. Common Paper allows termination for a material breach left uncured "following 30 days notice" [21].

The standards model the chain. In a LegalRuleML suborder list, a specification "holds if all Deontic Specifications that precede it in the SuborderList have been violated" [1]. In ODRL, a missed duty adds consequence duties, and the original and the consequences "MUST all be fulfilled" [2]. Its example pairs a fixed-date data duty with "a consequence of a $100 fine", and notes that once the date passes "the original duty is technically not able to be fulfilled" [2]. A tracker keeps the missed row open beside its consequence.

9. Amendments, conformed copies, precedence and redactions

The 2026 first amendment changed a different credit agreement "to, among other things, increase the Commitments and to extend the Maturity Date" [20]. It deletes "the stricken text" and adds "the double-underlined text" shown in the attached "Amended Credit Agreement" [20]. Maturity becomes "the fifth anniversary of the First Amendment Effective Date", 27 August 2026, or a later date for lenders who agree to an extension [20]. For the others that is 27 August 2031 (derived) [20], so one agreement carries more than one maturity row.

Markup carries meaning. The exhibit's pages are filed as images over a hidden text layer with no strike or underline marks, so in that text stricken and inserted words run together, as in "Moody'sMoody's" and paired page numbers such as "7174" in the contents (observed in the exhibit's HTML) [20].

Filing dates follow rules too. The amendment's Form 8-K was accepted at 17:47:42 on Friday 28 August 2026 with a filing date of Monday 31 August [20], which matches Regulation S-T's rule that a transmission begun after 5:30 p.m. Eastern time is deemed filed as of the next business day [17].

Precedence decides which text a row reads. In the Common Paper form, the Key Terms control over the Standard Terms, and the Order Form over the Framework Terms [21]. New versions leave agreements on prior versions unchanged, and every variable sits on the Cover Page, "so there are no hidden defaults" [21]. Regulation S-K lets a registrant redact immaterial terms it "customarily and actually treats" as private, with brackets "indicating where" text was omitted [19]. A row read from a redacted copy records the gap.

10. What extraction research shows

Finding a date and computing one are scored separately. In Chalkidis and colleagues' 2017 study of about 3,500 contracts, token-level F1 reached 0.72 for effective dates, 0.76 for termination dates, 0.67 for contract periods and 0.64 for contract value, the last two "possibly because the expressions that specify them are less standardized" [24].

CUAD's 510 contracts carry 13,101 labeled clauses in 41 categories [23]. In its baseline results one model reached AUPR of 47.8%, with precision of 44.0% at 80% recall and 17.8% at 90%, and the authors hold that "recall is more important than precision" [23]. The two proprietary models at the top of ContractEval's table scored F1 of 0.644 and 0.641 [29].

The 2026 study compared one domain-trained model with five frontier systems on 24 held-out SEC EDGAR contracts and 508 labeled field instances [30]. Effective date scored 0.773 to 0.884 and end date 0.692 to 0.833, above renewal term (0.571 to 0.667) and payment period frequency (0.400 to 0.629) (ranges derived), a gap the authors tie to "underlying ambiguity in the source data" [30]. Dates were matched with "no date normalisation" [30]. A 2025 paper on 58 internal contracts reported extraction rates for two models, without chain-of-thought prompting, "above 90% for basic fields like Party Names and Signatures", with "notable variations" for "Notice Period or Duration calculations" [31].

Date arithmetic belongs in code. On Test of Time's 200 duration questions, three model families scored 15.00%, 16.00% and 13.50%, against 58.57% to 76.28% on adding and subtracting [32]. The authors report that "the most common error among incorrect answers was a deviation of precisely one day from the ground truth label" [32]. In the 2025 metadata paper's example of a model's chain-of-thought, the model deduces an end date "50 days after the effective date" and writes "February 2nd, 2024 + 50 days = March 24th, 2024", which the authors call "the final correct value" [31]. 2024 is a leap year, so the sum is 23 March, or 22 March counting 2 February as day 1 (derived) [31]. 24 March fits a 28-day February (derived) [31].

A model finds the clause, the parties, the anchor event and the quoted rule. Code computes the day with a stated convention, roll rule and dated calendar. A person checks the row against the passage.

11. A worked contract, read into rows

The 2025 agreement's reporting and notice duties, read into rows [18]. Due dates are derived, with the event day excluded. Sections 6.01, 6.02, 6.03 and 6.14 are not among the covenants 8.01(b) lists (derived reading) [18].

Row	Trigger and rule	Due date (derived)	If missed
6.01(b) quarterly statements	45 days after each of the first three fiscal quarter ends, no roll stated	Sunday 14 February, Saturday 15 May and Saturday 14 August 2027	8.01(c): Event of Default if the failure continues for 30 days after notice, with up to 60 days for a failure that takes longer to cure with due diligence
6.01(a) annual audited statements	90 days after each fiscal year end, no roll stated	Tuesday 29 December 2026 and Wednesday 29 December 2027	8.01(c), as above
6.02(a) compliance certificate	"concurrently with the delivery" of the 6.01(a) and (b) statements	The day those statements are delivered	8.01(c), as above
6.03(a) notice of a Default	Four Business Days after any Default occurs	Counted in Business Days from the event	8.01(c), as above
6.14 interest hedge	At least 50% of the loans' floating interest expense from the Closing Date "until September 1, 2030"	Through 31 August 2030 under 1.02(b)	8.01(c), as above

The certificate row waits on another row's performance, so its date exists only once the statements go out. Under Section 6.02, the agent "shall have no responsibility to monitor compliance by Borrower with any such request for delivery", and each lender is "solely responsible for requesting delivery to it" [18].

12. Tracker fields, in order

A field list for a contract obligations tracker, drawn from the findings above:

#	Field	What it holds	Basis
1	Source	Contract, version or amendment, section, quoted passage and page	[4, 19, 20]

#	Field	What it holds	Basis
2	Bearer	The party bound	[1, 26]
3	Counterparty	The party owed the performance	[1, 4]
4	Modality	Obligation, prohibition, permission or entitlement, and their negations	[1, 26]
5	Action	What must be done, or not done	[2]
6	Trigger	The event or date that starts the period, and evidence of its date	[3, 5, 6]
7	Period rule	The duration as written, in days or months, and the counting words	[9, 18]
8	Calendar	Business day definition, holiday table and its version, time zone name	[8, 12, 13, 18]
9	Roll rule	The convention stated, or "none stated"	[10, 18]
10	Cutoff	Time of day, and when a notice counts as given	[17, 18, 21]
11	Recurrence	The set of times and any exception dates	[6, 7]
12	Notice window	For renewals and terminations, the last day to give notice	[21, 23]
13	Conditions	What must hold for the duty to apply	[5]
14	Consequence	Cure period, default row and remedy	[1, 2, 18]
15	Computed date	The due date, with the calendar version used	[8, 12, 13]
16	Linked rows	Certificates, notices, amendments and superseded rows	[18, 20]
17	Review	Who checked the row against the passage, and when	[28, 29, 30]

Implications

For contract managers and legal operations. A renewal row tracks the last day to give notice, from the term end, the notice period and when a notice counts as given [21, 23]. A deadline with no stated roll rule stays open for counsel, since the agreement states none [18]. A cure period runs from a notice, so the tracker records when each notice arrives [18, 21].

For finance teams. Reporting dates move with the fiscal calendar and the weekday: counting from the day after each period ends, three of four fiscal 2027 deadlines in the worked agreement fall on a weekend (derived) [18], and an amendment can give some lenders a later maturity than others [20].

For engineers. A model reads and code computes. Each computed date carries the versions of the holiday table and time zone database it used [12, 13], timestamps keep their zone names [8], and a clause travels with its definitions, an inference from the long-context study [33]. Recall of date and notice fields is measured on the owner's own contracts, because published scores use other contracts, fields and matching rules [23, 29, 30]. An amendment is read from its markup [20].

Limits of this analysis

The worked material is two U.S. credit agreements and one standard form, and no other contract type was read into rows. State bank holidays for the 2025 agreement were not checked. The counting convention for "within … after" is this note's own, and the note says nothing about how a court would read that phrase, a weekend deadline with no roll rule or the agreement's two definitions of "Business Day". No statute on automatic renewal was read.

The extraction studies are small or narrow: 24 contracts with vendor authors and no significance tests [30], 58 internal contracts [31] and worked examples [28]. CUAD's per-category results are a chart without readable values, so none is cited [23]. The date arithmetic results come from 2024, from a model maker's team [32]. The EDGAR count comes from a live index [34]. No tracker product was tested.

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