chessbets.fun — Final Pre-Build Feature & Rules Spec (v 0.9)

"Chess.com + real stakes" — we copy their proven UX wherever possible; anything below only diverges when crypto or wagering makes it necessary.

1. Core Game Settings

Item	Value / Rule	Notes
Time control	**3 + 2 blitz**	Locked for MVP; future variants gated behind a config switch.
Currency	**Always SOL** (lamports on-chain)	USD equivalent may be *display-only* in tooltips; all inputs/ledger remain SOL.
Premove / resign / draw	Behave exactly like chess.com on both desktop & mobile	

2. Stake → Play → Confirm Flow

1. **Select stake** (default quick-play tier = **0.02 SOL**; preset buttons 0.01 / 0.05 / 0.1 / 0.25 / 0.5 SOL; custom inside cap).

2. **Matchmaking** happens *before* money moves.

3. **10-second confirmation window** pops for both players; clicking **Confirm** triggers a single `createMatch` escrow transfer.

4. **If either cancels / times out**, match voids and players are re-queued—no refunds necessary.

3. Opening-NFT Royalty Logic

Step	Rule

A. Parse PGN after game ends. Walk moves until the first position **not** in official ECO.

B. The **last in-book ECO code** is the *opening of record*.

C. Pay **1.5 % of total stake** to White's opening-owner NFT and **1.5 %** to Black's. (Winner 93 %, platform 4 %.)

D. If no ECO match (ultra-rare lines), route full 3 % equally to platform treasury (future DAO governance may change this).

---

4. Anti-Cheat / Disconnect Rules

Item	Decision
Disconnect grace	15 s of lost WebSocket before client auto-submits `ResultType::Timeout`.
Timeout claim guard	On-chain check: `clock.slot > start_slot + 30 slots` (~15 s) to prevent spoofing.
Rematch offer	Automatic dialog for a same-stake rematch appears for 7 s after game end; if both accept, they bypass queue & reuse the stake selector.

---

5. Rating System (ELO)

Phase	K-factor	Notes
Provisional (first 20 games)	64	Max stake per game 0.05 SOL.
Established	32	Standard progress.
Rating floor	Current floor – 200; can't drop lower.	
Decay	Inactive > 30 days → −10 pts/week (soft decay).	

6. Financial & Compliance

Rule	Value
Royalty rounding	Fractions < 1 lamport **truncate toward platform rake** (deterministic, audit‑friendly).
Precision	All splits done in lamports; percentages computed with integer math to avoid rounding drift.

7. Mobile UX Notes

- Haptic on move & confetti on win (as per roadmap).

8. Audit & Bug‑Bounty Milestones

Date	Action
May 1 2025	Freeze contracts for internal review & fuzzing.
May 3 – 7	Submit to dual audit shops (express reviews).
May 7	Publish 5 % of contract supply to Immunefi bounty (Devnet).
May 15	Integrate any fixes; tag `v1.0.0` for hackathon submission.

9. Open Items — None blocking build

All critical behavioural constants are now frozen. Future nice‑to‑haves (e.g., Chess960, VIP high‑stakes arena) are version‑gated past MVP.

✅ Ready to code

With this spec saved, devs can implement smart contracts and front-end flows in Cursor with zero ambiguity. Any new feature requests will start a new spec revision, but **v 0.9** is locked for MVP development.

Stake-Matching & Game-Start Flow (v 1.0 spec)

Phase	What the system does	What the player sees / does
1 — Choose stake	• Default quick-play tier is **0.02 SOL**.	
• Dropdown lets you switch to any preset (0.01 / 0.05 / 0.1 / 0.25 / 0.5 SOL) or enter a custom amount within your cap (≤ 0.05 SOL while provisional, ≤ 1 SOL otherwise).	A stake selector in the header. Last choice is remembered, so most users just click **Play**.	
2 — Find opponent (no money moved yet)	• Your client announces "Looking for a 0.05 SOL game."	
• The matchmaker pairs you with the first waiting player whose **desired stake exactly equals yours**.		
• If no one is waiting, you're queued.	Spinner: "Searching …". After 15 s a toast suggests lowering the stake.	
3 — Match found → "Confirm" window (money moves)	• When a pair is formed, both clients receive a *Match ID* and a 10-second confirmation dialog:	
"You're matched with **0.05 SOL** at 3 + 2. Click **Confirm** to lock your stake."		

• Confirmation → `createMatch` instruction fires and escrow is funded.	Dialog with **Confirm** (green) / **Cancel** (grey). A countdown shows 10→0 s.
4 — Fallbacks	• If either player clicks **Cancel** or times out, the match is void and both are returned to Step 2.
• If a player mismatches stake during window (e.g., balance dropped), the system auto-cancels and re-queues the other player.	Short toast explains the cancellation.
5 — Game begins	• After both confirms succeed, the board loads instantly and timers start at 3 + 2.	Chessboard with stake, timers, wallet avatars.

Why this flow fixes liquidity + refunds

- Money is only transferred **after** the match exists and both sides accept, so no automatic refunds.

- The confirmation window is short, keeping the "one-click" feel.

- The queue still concentrates most traffic in the default tier, maximising instant matches.

- Custom stakes remain possible without fragmenting quick-play liquidity.

In-game Financial Logic (unchanged percentages)

Recipient	% of total stake	Notes
Winner	**93 %**	Paid immediately on `settleMatch`.
Platform rake	**4 %**	Sustainable fee for ops & rewards.
Opening-NFT royalties	**3 % total → 1.5 % to White's opening owner + 1.5 % to Black's opening owner**	Keeps fees at 7 % overall while rewarding both sides' ECO NFTs.

Key NFT rules

1. **Automatic detection**

   - When the game ends, the client classifies both players' ECO codes (White & Black).

   - Those two mint addresses are passed into `settleMatch`; the contract routes 1.5 % shares accordingly.

2. **Distribution model**

   - All ECO openings are pre-minted as compressed NFTs.

   - They are *distributed, not sold* (airdrops to streamers, early adopters, tourney winners).

3. **Visibility**

   - During a game, each player can see a tiny thumbnail of the current opening and its NFT owner handle—reinforcing the royalty loop.

Parameters to freeze before implementation

Parameter	Recommended value	Change later?
Default quick-play stake	**0.02 SOL**	Yes—monitor liquidity.
Confirm-window length	10 s	Yes (config setting).
Preset tiers	0.01 / 0.05 / 0.1 / 0.25 / 0.5 SOL	Add higher once liquidity grows.
Provisional cap	0.05 SOL	Tune with abuse data.
Standard cap	1 SOL	Raise for VIP arena later.