

Commercial Manufacturing of AB-101

Budgetary projection for the September Board

Capacity, lead time and cost for a dedicated seven-suite operation.

SUMMARY

Responses to your questions

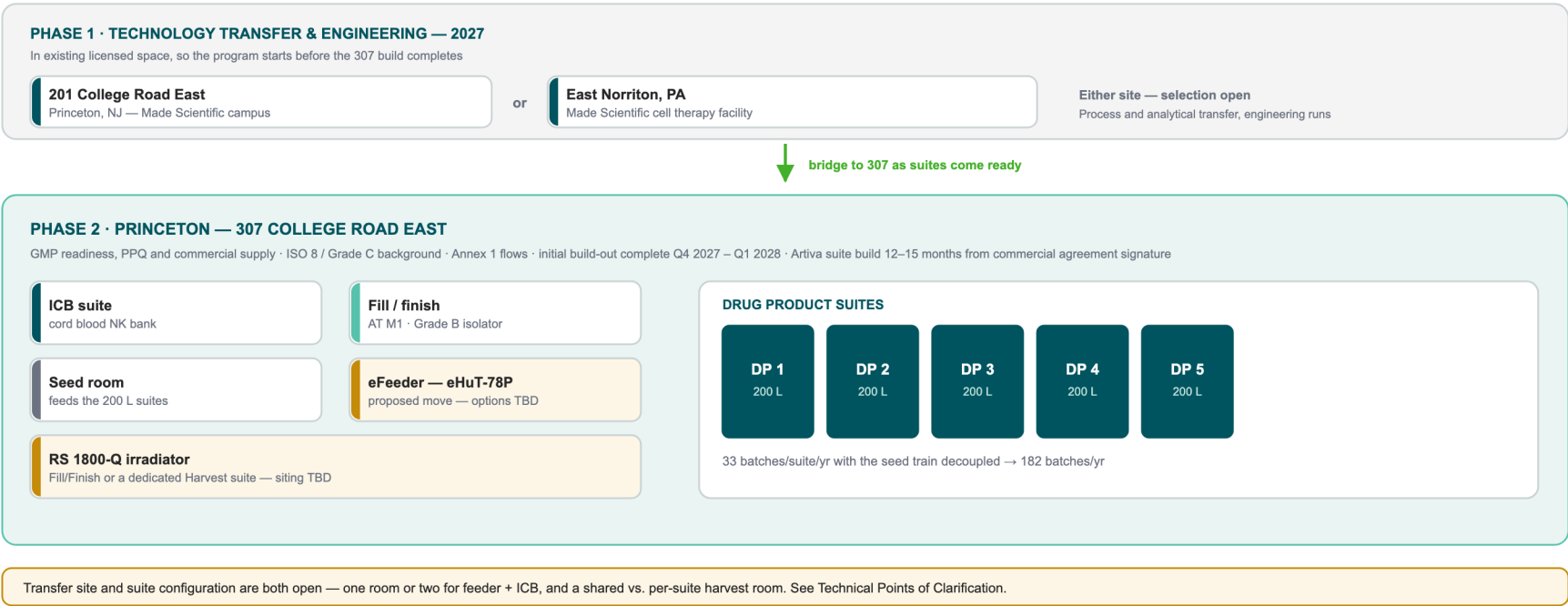
You asked	Our answer
Lead time to 7 commercially-licensed GMP suites	Technology transfer starts 2027 at 201 College Road East or East Norriton, bridging to Princeton 307 for GMP, PPQ and commercial readiness. Made Scientific's initial build-out at 307 — cleanrooms, labs, warehousing and cold storage — completes Q4 2027 – Q1 2028; the Artiva suite build runs 12–15 months from signature of the commercial agreement
Cost through Tech Transfer and PLI / 1st commercial batch (2027–2030)	\$10.10M – \$17.20M, with program initiation and GMP readiness fee-waived
Cost per batch at 200 L, 20 batches/suite/yr	\$380K – \$430K all-in — \$864 – \$977 per vial, inside your <\$1,000 target
Suite reservation fee	\$0 — against an agreed minimum annual batch commitment
Staffing	Dedicated, not shared. Included in the batch fee
Raw materials	\$200K per batch, your assumption, passed through at cost
Other — semi-annual APVs, stability, storage	Included in the batch fee
Made Scientific versus other CDMOs	Made Scientific funds and equips the suites — approximately \$85M of build that a standard CDMO charges to the client

Additional finding, on slide 4: the same seven rooms can support approximately 24% more output than the current plan assumes.

Starting now, bridging to 307

Where each step runs

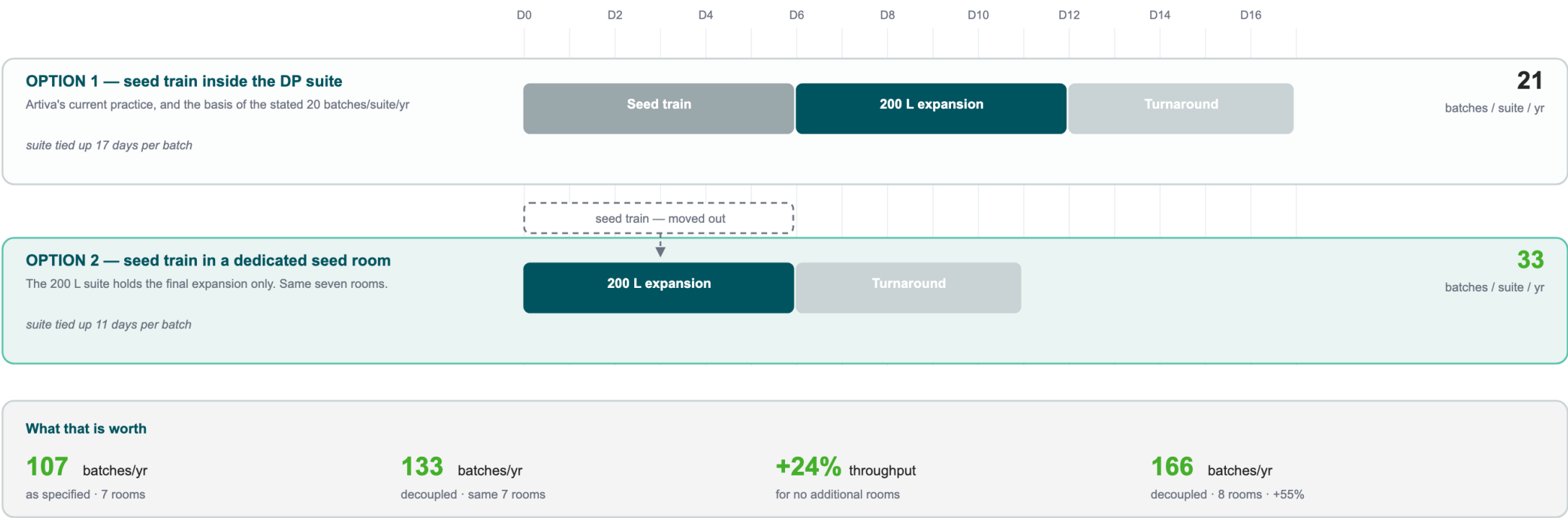
Technology transfer starts in existing licensed space and bridges into Princeton 307 as each suite comes ready, carrying the process through GMP readiness, PPQ and commercial supply.



Increasing throughput within the same seven rooms

Why the seed train should leave the 200 L suite

The DP suite is the constrained asset. Moving the seed train out cuts its occupancy per batch from 12 days to 6 — and the suite turns over 55% more often.



Seed-phase and turnaround durations are MADE estimates pending confirmation; every other input is Artiva-disclosed.

The eFeeder suite already achieves ~60 batches a year from a 24-day campaign, because only the 9-day bioreactor step occupies the room. Apply the same logic to drug product — turn one DP suite into a seed room feeding the other four — and the same seven rooms go from 107 to 133 batches a year. Add an eighth room and it is 166.

COST

Program cost

THROUGH TECH TRANSFER, PPQ AND PLI · 2027–2030

\$10.10M – \$17.20M

Program initiation and GMP readiness are fee-waived

Phase	Year
Technology transfer — ICB, drug product, fill/finish	2027
Analytical method transfer, qualification and validation	2027–28
Engineering runs and GMP readiness	2028
Aseptic process simulation and PPQ campaign	2029
BLA support, PLI readiness, first commercial batch	2030

PER BATCH AT 200 L · TIERED ON VOLUME

Annual volume	Conversion	Materials	All-in	Per vial
up to 60 batches	\$230K	\$200K	\$430K	\$977
61 – 120 batches	\$210K	\$200K	\$410K	\$932
121 – 180 batches	\$195K	\$200K	\$395K	\$898
over 180 batches	\$180K	\$200K	\$380K	\$864

Every tier sits inside the <\$1,000 per vial commercial COGS you have set publicly.

At 8 vials per patient that is \$6,909 – \$7,818 of drug product cost per patient, against the \$8,000 in your own materials.

Suite reservation fee: \$0

Charged instead as an agreed minimum annual batch commitment, aligning payment with output rather than with reserved capacity.

All figures ±30%, the tolerance you specified. Materials at \$200K per batch is your assumption, carried through at cost.

The same total, by milestone

The identical \$10.10M – \$17.20M from the Cost slide, decomposed to milestone granularity through Pre-License Inspection to commercial manufacturing.

Milestone	Year	Low	High	Basis
M1 · Program Initiation & Knowledge Transfer	2027	Waived		Fee waived — as on the eHuT-78P program
M2 · Technology Transfer — Process & Analytical	2027	\$4.90M	\$7.90M	ICB, drug product and fill/finish process transfer; analytical method transfer
M3 · GMP Readiness	2028	Waived		Fee waived — as on the eHuT-78P program
M4 · Engineering Runs	2028	\$1.60M	\$2.60M	ICB and drug product engineering runs
M5 · Aseptic Process Qualification	2029	\$450K	\$750K	3 consecutive media fills; semi-annual APS thereafter sits in the batch fee
M6 · Process Performance Qualification	2029	\$1.90M	\$3.80M	eFeeder, ICB, DP and fill/finish PPQ — 3 consecutive successful batches each
M7 · Regulatory & PLI Readiness	2029–30	\$750K	\$1.25M	CMC authoring, PLI prep, mock inspection
M8 · Stability Program	2027–30	\$500K	\$900K	ICH stability protocol, pulls, reporting
M9 · Commercial Manufacturing & Lifecycle	2030+	\$380K	\$430K	All-in per batch under the volume-tiered schedule — see the Commercial Forecast

M1–M8 total: \$10.10M – \$17.20M, matching the Cost slide exactly. M9 is priced per batch, not a fixed fee — forecast by configuration on the next slide.

Volume-based discount, by configuration

Structured the way a volume-discount schedule should read: as commitment grows, the batch fee steps down. Anchored to Made Scientific's throughput options rather than an Artiva demand forecast, as drug product volumes have not been shared.

Illustrative year	Configuration	Ceiling	Commitment	Committed batches	Batch fee	Minimum annual fee	\$/vial
2030 (PLI & launch)	Option 1	107	50%	54	\$230K	\$12.42M	\$977
2031	Option 2	133	65%	86	\$210K	\$18.06M	\$932
2032	Option 3	166	80%	133	\$195K	\$25.93M	\$898
2033+	Option 4	265	90%	238	\$180K	\$42.84M	\$864

The fee steps down as committed volume scales — \$230K → \$210K → \$195K → \$180K per batch — and every step remains inside your <\$1,000/vial commercial COGS target. Materials pass-through is additional at \$200K/batch and is not part of the minimum fee.

ASSUMPTIONS STATED EXPLICITLY, NOT IMPLIED

The 2030→2033+ year mapping is Made Scientific's proposed adoption sequence, not a commitment Artiva has made. Commitment levels (50/65/80/90%) are illustrative, not yet negotiated. Batch fees are read from the \$2 tier schedule at each year's committed volume, not the configuration's ceiling — you do not get bulk-tier pricing on capacity you have not committed to. The interactive site carries a 5-year ramp you can adjust yourself.

Commercial model comparison

	A standard CDMO	Made Scientific
Facility build-out	Charged to you — est. \$30M–\$40M	Absorbed
Suite fit-out and process equipment	Charged to you — est. \$45M–\$55M	Absorbed
FTEs / labor	Hire and manage your own — est. \$7M–\$11M/yr for a dedicated ~45–55 FTE team	Included in the batch fee — no separate hire
Suite reservation fee	Charged, and non-refundable	\$0 against a volume commitment
Program initiation	Charged	Waived
GMP readiness (APQ, CQV, equipment maintenance & calibration, EMPQ, etc.)	Charged	Waived
Dedicated program management	Charged — est. \$15K/month	Included
Capacity	Shared, multi-client	Dedicated suites

WHY THIS MATTERS FOR A BUILD-VERSUS-BUY DECISION

A seven-suite build is roughly \$85M — our own estimate of \$30M–\$40M facility shell plus \$45M–\$55M suite fit-out and process equipment. Your FY2025 accounts show \$2.6M of property and equipment purchases and \$874K of leasehold improvements in total — this would be a capital project about a hundred times anything Artiva has undertaken.

Made Scientific funds both. FTEs are dedicated, not billed separately — their cost sits inside the per-batch fee on the Cost slide, not this comparison.

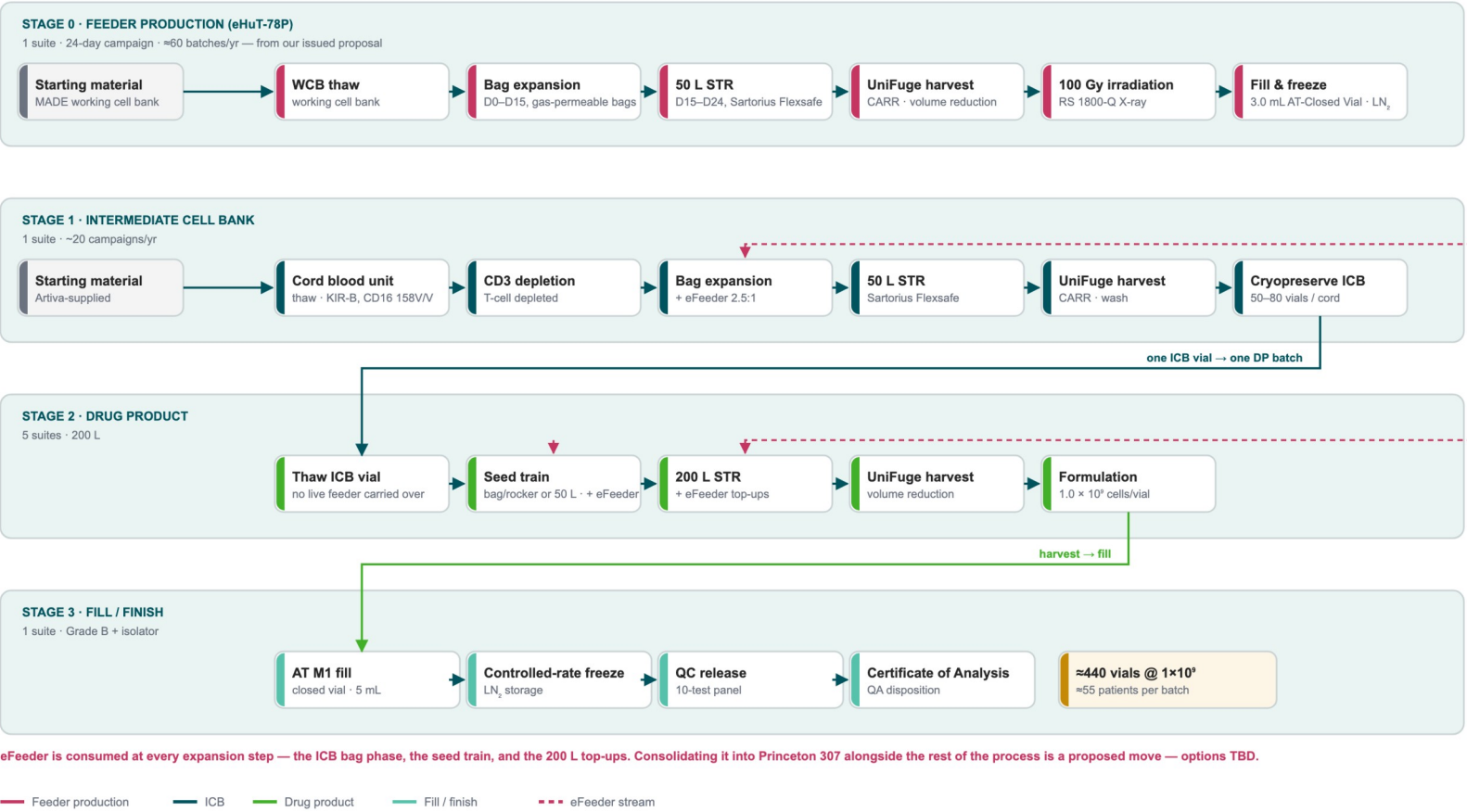
Appendix

Process flow, suite floor plan, production strategy options, the open variables, and the basis of estimate.

Assumed Process Flow

Assumed Process Flow

Feeder production through to cryopreserved drug product. eFeeder is consumed at every expansion step. Stated as our assumption pending your confirmation.



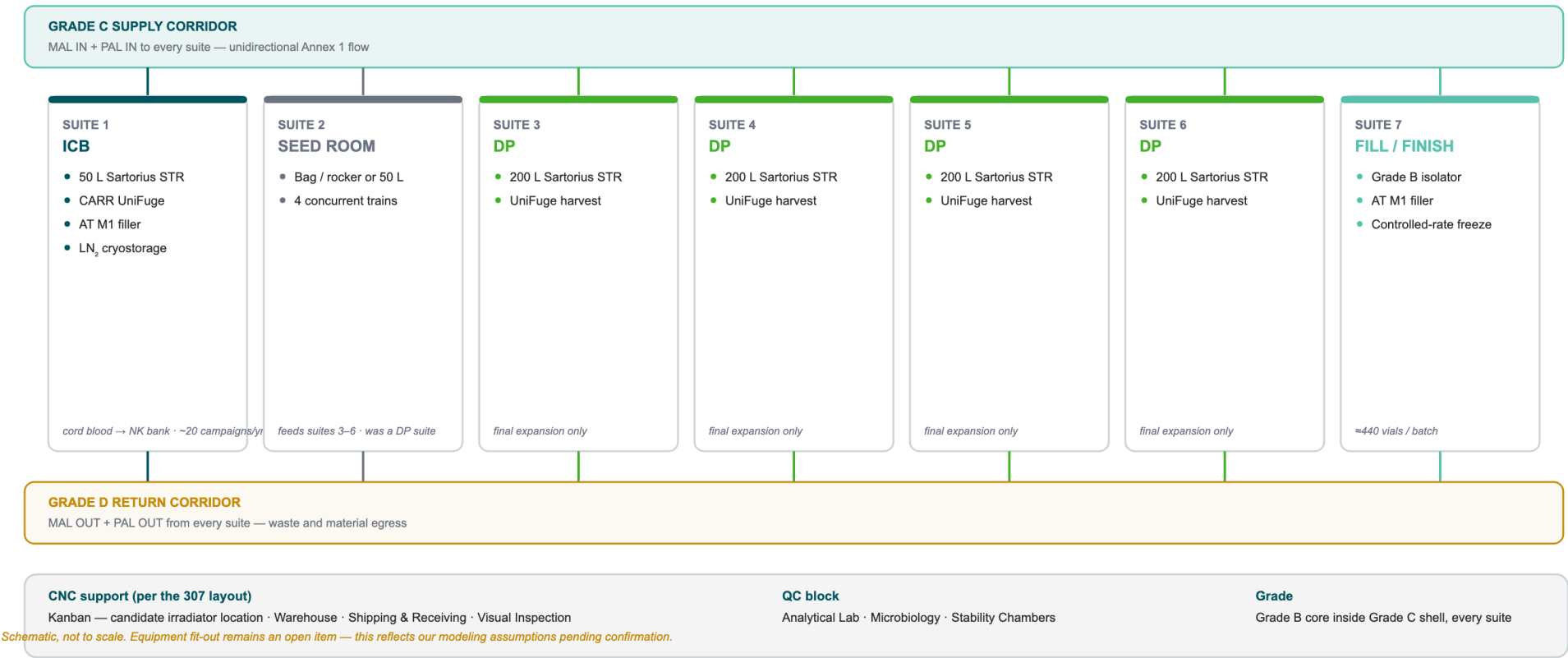
eFeeder is consumed at every expansion step — the ICB bag phase, the seed train, and the 200 L top-ups. Consolidating it into Princeton 307 alongside the rest of the process is a proposed move — options TBD.

eFeeder has no suite in the seven-room plan as originally specified. Consolidating its production into 307 alongside the rest of the process is a proposed move — options TBD.

Suite floor plan and equipment

Suite floor plan and equipment

Princeton 307 College Road East — decoupled configuration, same seven rooms as specified. Schematic, not to scale.



Schematic, not to scale, based on the 307 layout — decoupled configuration, suite 2 converted from drug product to a shared seed room. Equipment fit-out remains an open item; this reflects our modeling assumptions pending confirmation.

Production strategy options

	Strategy	Rooms	Batches/yr	Patients/yr	Annual conversion cost
1	As specified — 1 ICB + 5 DP + 1 F/F, seed in-suite	7	107	5,885	\$19.3M
2	Decoupled seed — same seven rooms	7	133	7,315	\$23.9M
3	Decoupled seed — one additional room	8	166	9,130	\$26.6M
4	East Norriton ballroom build	12	265	14,575	\$37.1M

Patients per year assume the proposed Phase 3 regimen of two 4-billion-cell doses, i.e. 8 vials per patient. Your stated commercial reach — 250 clinics at 1–2 patients a month — is 3,000 to 6,000 patients a year, so Option 1 already covers the launch plan and the others create headroom. eFeeder was never one of the seven rooms; consolidating its production into 307 is a proposed move, options TBD.

Decoupling the seed train moves the constraint onto the seed room. One seed room running four concurrent trains supports about 182 batches a year, so Option 4 needs a second — without it, eight drug product suites are throttled to 182.

Key sensitivity: NK seed density

Irradiated feeder cells do not replicate, so every drug product batch consumes them at seed and again at each top-up. Our working assumption puts feeder seeding density at 2.5:1 against CD3⁺CD56⁺ NK cells, which leaves the NK seed for a 200 L run as the open variable.

NK expansion	NK seed for 440B	Feeders at 2.5:1	DP batches per feeder run	Feeder suites needed
100×	4.4B	11.0B	~1.4	1.2
250×	1.8B	4.4B	~3.4	0.5
500×	0.9B	2.2B	~6.8	0.2
1000×	0.4B	1.1B	~13.6	0.1

One dedicated feeder suite covers the full program unless NK expansion runs below about 100-fold. Confirming the NK seed density and the number of feeder top-ups would let us replace this table with a single number.

Basis of estimate

Input	Value	Source
Drug product batch yield	~440 vials at 1×10^9 cells	Linear 4× from $\geq 110\text{B}$ at 50 L (Cytotherapy, 2026)
Batch duration	11–13 days	Your process summary, August 2026
Batches per suite per year	20 (in-suite seed) / 33 (decoupled)	Your San Diego operating rate; decoupled figure is our estimate
Feeder campaign	24 days, ~60 batches/yr per suite	eHuT-78P process and our East Norriton suite assessment
Feeder : NK seeding ratio	2.5 : 1	Our working assumption
Dose	2×4 billion cells, 8 vials per patient	Proposed Phase 3 design, 8-K of 8 May 2026
Materials per batch	\$200,000	Your assumption
Commercial COGS ceiling	<\$1,000 per 1B-cell vial	Artiva public statements, 200 L process

Estimates pending confirmation: the split of the 11–13 day batch between seed train and 200 L expansion, suite turnaround time, and NK seed density. These move the throughput figures; they do not change the commercial structure.

Next steps

1

Confirm the process assumptions

A short technical session on seed-train duration, suite turnaround and NK seed density would replace our estimates with your numbers and tighten the $\pm 30\%$.

2

Resolve the suite configuration

Transfer starts at 201 College Road East or East Norriton and bridges into 307. Consolidating eFeeder into 307 is a proposed move, options TBD — and raises one room or two for feeder + ICB, and shared vs. per-suite harvest.

3

Capacity reservation

A reservation agreement secures a technology transfer slot and suite capacity, and is credited in full against work orders.

4

Detailed proposal

On your word we convert this into a work-order-level proposal with a full Gantt to first commercial batch.