

STRONGER
TOGETHER

Mission Critical Architecture



Topic Presented by Beau Dromiack – WMA Architects

Project Delivery Accelerator – Kill the “Go-Slow-Machine”.

Topic Agenda:

1. The mission forward: Higher Craft = Faster Delivery
2. The anatomy of the Go-Slow-Machine
3. Summary of WMA/C3 Lessons Learned for high performance project delivery that informs our project accelerator idea.
4. Project Delivery Accelerator - Roles and Schedule
5. Summary of potential time savings and impact.

Session Objectives:

1. Lessons learned for high performance project delivery
2. Learn a new project delivery strategy to accelerate the design, AHJ review and build schedule.
3. Idea for faster design and AHJ review times

STRONGER
TOGETHER



SEMICON[®]
WEST

Mission Forward: Higher Craft = Faster Delivery

The Situation: *Imagine having a vision of new technology. Imagine moving fast, hiring the best, pushing your team to innovate, to test, to risk, to fail, and to test again with ultimate success in a blindingly short amount of time to stay ahead of your competition only to lose the time savings and market advantage to the legacy Go-Slow-Machine.*

The Challenge: Move faster while maintaining high quality design craft, safety, code compliance and team integration.

The Solution: Kill the Go-Slow-Machine by increasing design craft quality at each phase, applied lessons-learned, agency review innovation and better team integration.

The anatomy of the Go-Slow-Machine.

- 1. Inadequate project start up**
- 2. Legacy agency review process**
- 3. Inadequate and poorly researched code documents**
- 4. Poorly crafted and uncoordinated design documents**
- 5. Poor integration between the design team and the build team**
- 6. Owner unprepared to kick-off the project**
- 7. Lessons-Learned not applied to the project**



Lessons Learned – That inform Our Accelerator Idea

Procurement, Design, Management and Construction:

An integrated team throughout the project.

Take time to start a project correctly – Reinforce roles, goals, review lessons learned from past projects.

Discuss conflict resolution

Engage the AHJ early to understand the local permitting process, submittal expectations and ways to move quicker.

Be proactive in identifying change and solutions.

Be proactive in applying the solutions.

Safety first balanced by the project management tripod:

Cost, Schedule and Quality

Consider all materials to be on the critical path.

Make the job a warehousing exercise and not an expediting exercise.

Prefabricating assemblies saves time and money and increases quality.

These ideas start in design and required intense coordination.

Example Case History:

Accelerated schedule delivered in nine months: 100,000 sf Iso 3 (Class 1) cleanroom and 70,000 sf office building: Project start in April – First tools installed in October – Test product shipped in following January.

Lessons Learned – That inform Our Accelerator Idea

Three team principles to consider:

1

Respect age and experience.

We force multiply our project delivery and quality design by recruiting and integrating 40 year plus experienced “Senior Interns” into our teams.

2

Operate as a family.

Centered on craft excellence and trust.

3

***Time + Experience
+ Wisdom =
Projects run
smoother,
More effective and
deliver on time.***

Project Delivery Accelerator

Roles and Our Schedule



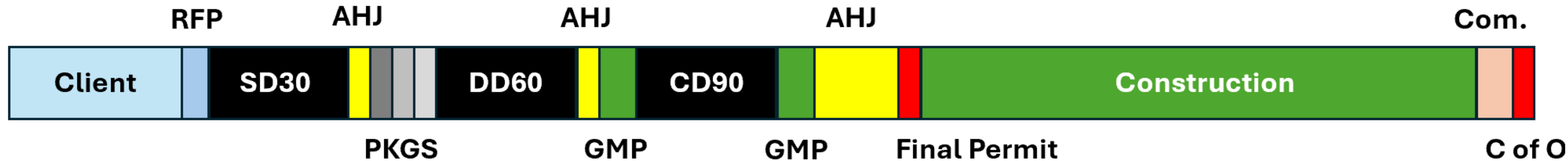
Project Delivery Accelerator

Roles and Our Schedule



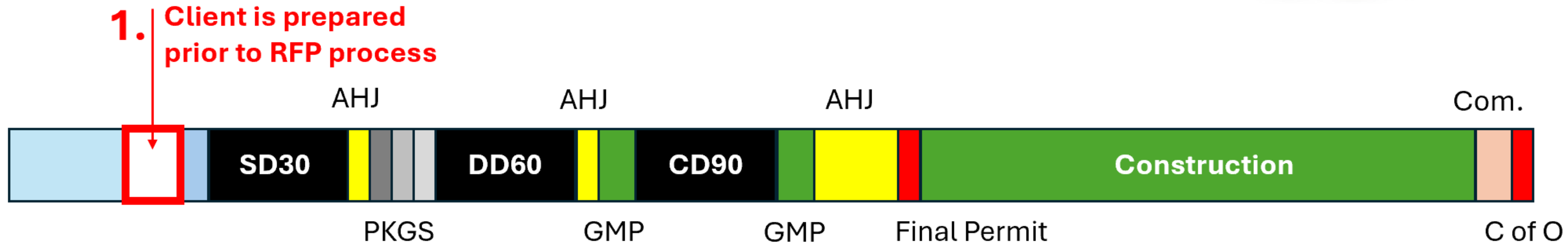
Project Delivery Accelerator

Roles and Our Schedule – **Proposed Faster**



Project Delivery Accelerator

Roles and Our Schedule – Proposed Faster



1. The project starts the best when the client is best prepared to start.

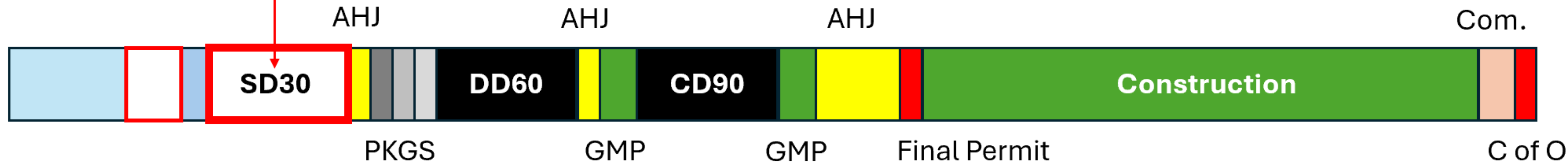
After the RFP process the client should have the following ready to issue in draft form to the selected team: Draft program, equipment matrix, equipment specifications, preferred tool/equipment layout, operational flow, chemical list and schedule.

Project Delivery Accelerator

Roles and Our Schedule – Proposed Faster



2. Craft Excellence
Architect led Code/Submittal coordination



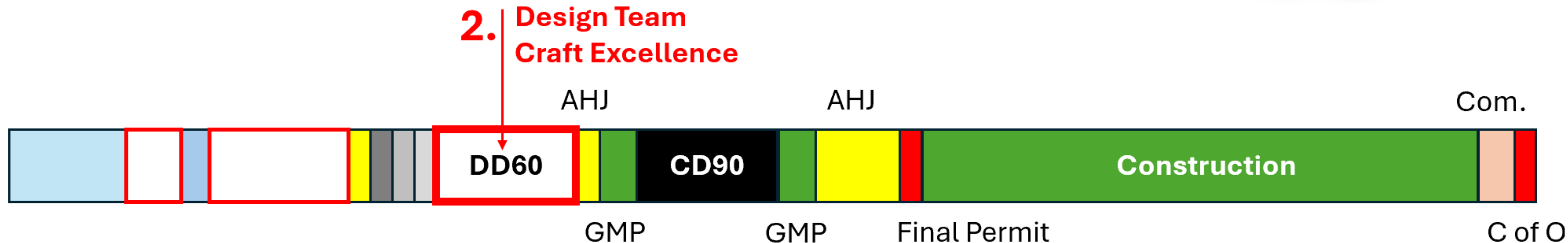
2. Craft Excellence = Coordination Excellence = Faster Agency Review

~70% of submittals to the city are of poor quality: Incorrect and inadequate code information and poorly coordinated documents.

(Source: From interviews with AHJ safety plan review leadership)

Project Delivery Accelerator

Roles and Our Schedule – Proposed Faster



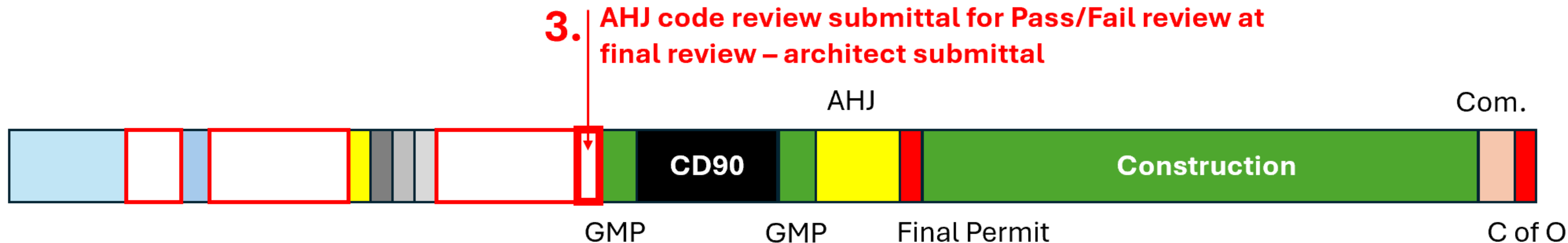
2. Craft Excellence = Coordination Excellence = Faster Agency Review

~30% of submittals to the city are of good to great quality with correct and adequate code information. The **70%** are slowing down the **30%**.

(Source: From interviews with AHJ safety plan review leadership)

Project Delivery Accelerator

Roles and Our Schedule – Proposed Faster

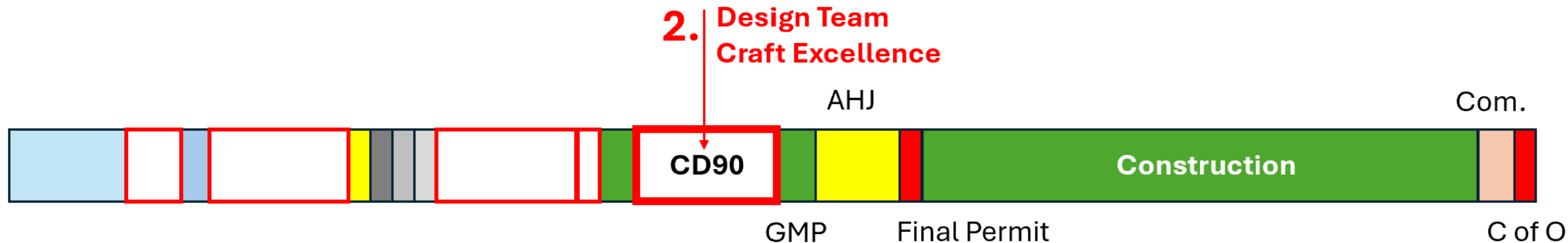


3. Accelerate agency review with two-part PASS/FAIL plan review

Part 1: Architect team submits completed code drawings at DD for agency review.

Project Delivery Accelerator

Roles and Our Schedule – Proposed Faster

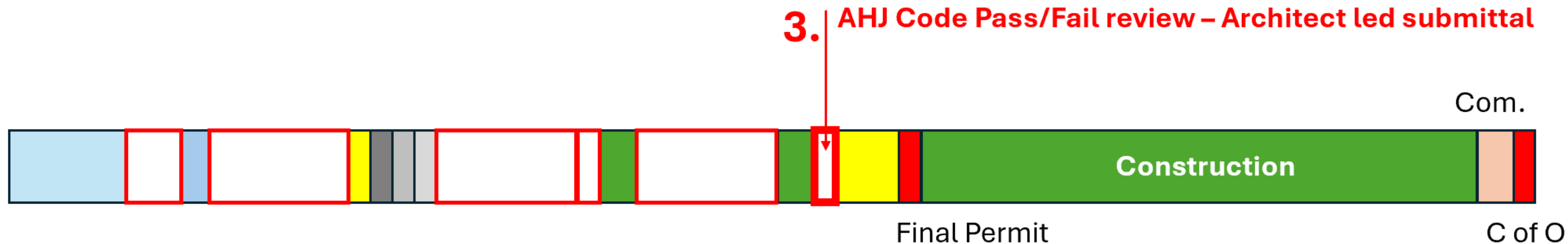


3. Accelerate agency review with two-part PASS/FAIL plan review

Part 1: The AHJ submits review comments back to the architect team to incorporate into the CD90 phase. The AHJ now has a preview of the final submittal which will save time during their final permit review phase.

Project Delivery Accelerator

Roles and Our Schedule – Proposed Faster

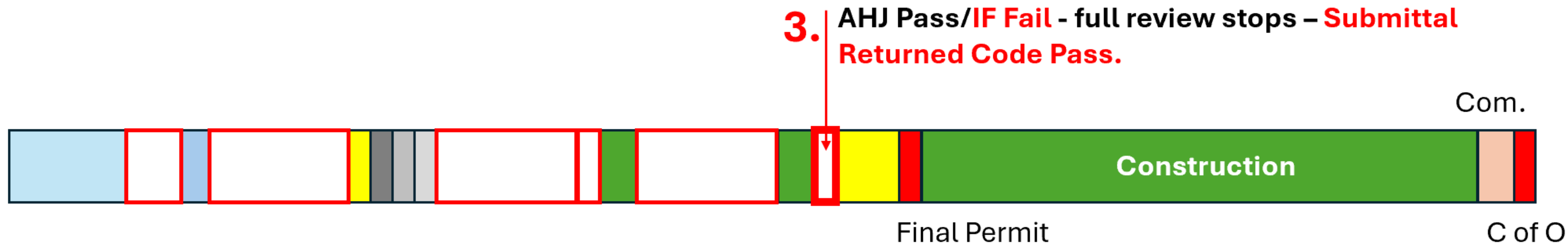


3. Accelerate agency review with two-part PASS/FAIL plan review

Part 2: Code Pass/Fail. The architect teams submits the final full package for permit review. The AHJ compares the Part 1 code review to the Part 2 reviewed code documents.

Project Delivery Accelerator

Roles and Our Schedule – Proposed Faster

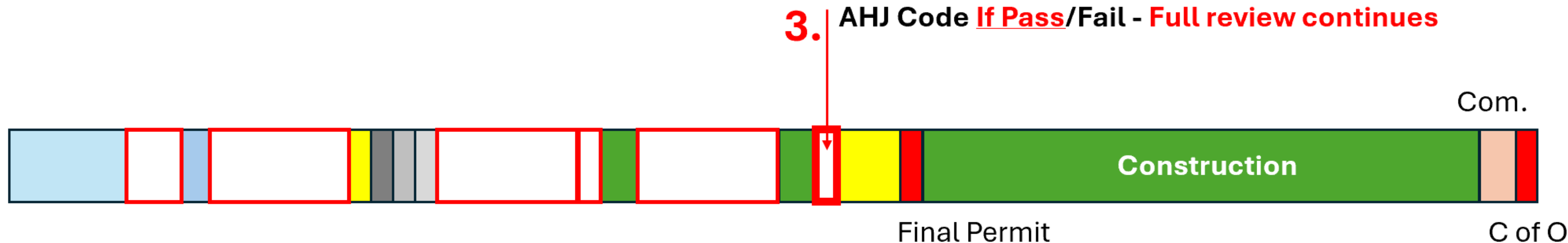


3. Accelerate agency review with two-part PASS/FAIL plan review

Part 2: If Fail. The AHJ rejects submittal to provide time saving for the 30% “Pass” submittals. The “Fail” submittal design team need to resubmit matching the Part 1 code review comments prior to full resubmittal.

Project Delivery Accelerator

Roles and Our Schedule – Proposed Faster

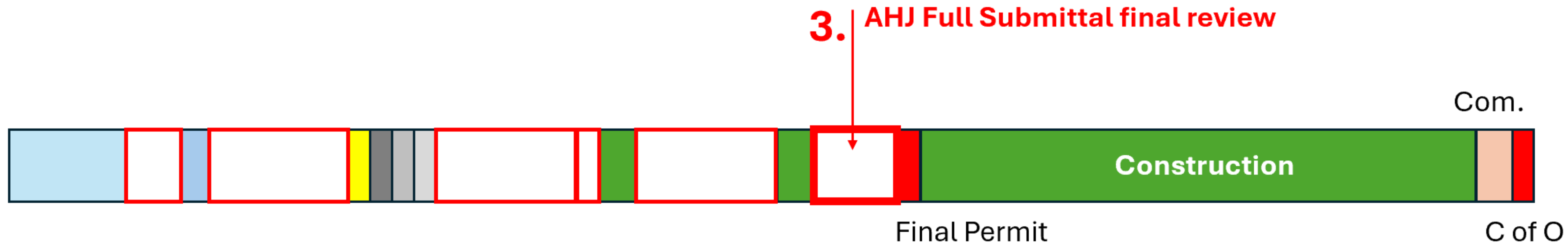


3. Accelerate agency review with two-part PASS/FAIL plan review

Part 2: If Pass. If the Part 2 code submittal matches the Part 1 reviewed code submittal than the AHJ continues the full submittal review. The final review will be faster because the Part 1 has already been reviewed.

Project Delivery Accelerator

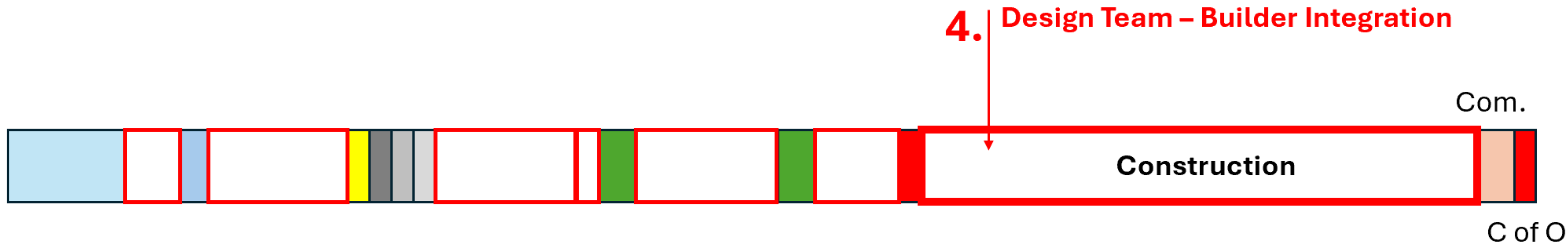
Roles and Our Schedule – Proposed Faster



Part 2: If Pass. This process will keep the poor quality 70% from slowing up the high quality 30%. It will also ensure better submittals and more efficient plan review. High design craft is rewarded with faster review times.

Project Delivery Accelerator

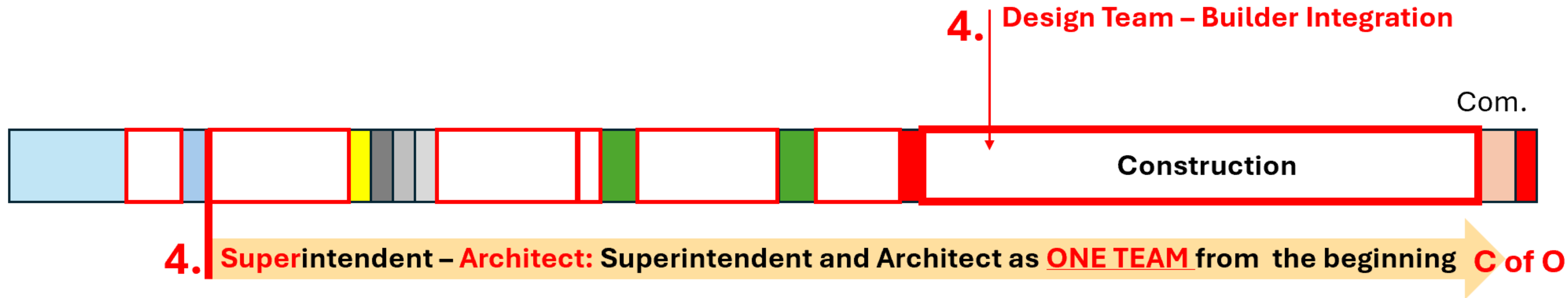
Roles and Our Schedule – Proposed Faster



Integration: Design and build team link a senior architect with the senior superintendent at the beginning of a project to create better integrated documents to save changes in the field and create better team cohesion.

Project Delivery Accelerator

Roles and Our Schedule – Proposed Faster



Integration: The integration of the build superintendent and the architect/design team is the Superintendent-Architect as one team from the beginning. Integration will reduce changes in the field saving time and money.

Summary of Time Savings and Impact

Note: Potential time savings estimated based on past project experience:

1. **Client is prepared:** Potential time savings: ~2 to 6 weeks
Time saving realized by faster project start and uninterrupted momentum from waiting for information.
2. **Design Team Craft Excellence:** Potential time savings: ~2 to 4 weeks
Times saving realized through more efficient coordination, less redo, less review comments (target zero comments), less time on resubmittals
3. **Agency Review – Two-Part Pass/Fail process:** Potential time savings: ~3 weeks
Time saving realized by having a separate code submittal review allowing for a more efficient review process and less time waste on poorly crafted documents.
4. **Design Team – Builder Integration:** Potential time savings: ~4 to 8 weeks
Time savings realized by fewer change orders, fewer RFIs and quicker review of submittals. Less conflicts in the field save time. Punch-list and commissioning will be more effective with better design and builder integration starting at the beginning of a project.

Imagine 1 week saved for a high-out put fab - 168hrs/week @ ~\$3,000,000/hr = \$504,000,000 in gross revenue saved.

(Source: AI Grok deep data analysis of a global review of gross revenue per hour scaled to a single high output fab.)



STRONGER
TOGETHER

Thank You

