

# Five Risk Mitigation Strategies for Military Construction Schedule Challenges

Moderator: Cindy Lincicome, TLI Construction, Inc.

Speaker:

- Diane Bragoni, Founder & Principal Consultant, CPM Schedule Solutions LLC

May 15, 2024, 10:30 a.m.



20  
24

JOINT ENGINEER  
TRAINING CONFERENCE  
& EXPO

SAMEJETC.ORG



@SAMENATIONAL



@SAME\_NATIONAL



#SAMEJETC24



"SOCIETY OF AMERICAN MILITARY ENGINEERS"



 conferences i/o



or browse to  
[jetc.cnf.io](https://jetc.cnf.io)

This is an interactive session.  
To participate, use your mobile device:  
[jetc.cnf.io](https://jetc.cnf.io)  
Or scan the QR Code

- Find the session.
- The presenter will unlock the poll(s) during the presentation.
- Please complete a brief Evaluation Survey at the end of the session.

MAY 14-16, 2024  
ORLANDO, FL

OPERATION:  
COLLABORATION

SAME [SAMEJETC.ORG](https://samejetc.org)

# HOUSEKEEPING ITEMS

Take Note of Exits

Silence Your Mobile Devices

Presentations and Audio Recordings will be available in the Attendee Service Center until August 30, 2024

Download your PDH record in the Attendee Service Center before August 30, 2024



# Thank You to our Education Session Sponsors





# MODERATOR



Cindy Lincicome  
TLI Construction, Inc.  
President

## Fun Facts

- Born and raised in Germany until graduating from Heidelberg High School
- Favorite past-time is with Grandchildren
- 103rd National SAME President

MAY 14-16, 2024  
ORLANDO, FL

OPERATION:  
COLLABORATION

SAME SAMEJETC.ORG



# SPEAKER



**Diane Bragoni**  
CPM Schedule Solutions LLC  
Founder & Principal Consultant

## Fun Facts

- Born & Raised in New England
- Military Spouse
- Enjoys Exercise and Audiobooks
- New Boxer Puppy

MAY 14-16, 2024  
ORLANDO, FL

OPERATION:  
COLLABORATION

SAME SAMEJETC.ORG

*Live Content Slide*

**Poll: Which schedule concern resonates the most?**

# Objective:

- 5 risk mitigation strategies MILCON scheduling
- MILCON Requirements  $\neq$  Private Sector Requirements
- Delays, progress payments, quality control, submittals
- **Actionable tips** – for anyone regardless of background



# Risk Strategy 1: Streamline Schedule Management



2024

JOINT ENGINEER  
TRAINING CONFERENCE  
& EXPO

[SAMEJETC.ORG](http://SAMEJETC.ORG)



[@PSAMENATIONAL](https://www.facebook.com/PSAMENATIONAL)



[@PSAME\\_NATIONAL](https://twitter.com/PSAME_NATIONAL) | [#SAMEJETC24](https://twitter.com/SAMEJETC24)



["SOCIETY OF AMERICAN MILITARY ENGINEERS"](https://www.linkedin.com/company/society-of-american-military-engineers)

# Risk Strategy 1:

Tailor schedule specs for value-add requirements/process.

**Streamline the responsibilities for contractors to execute, and government to review, while ensuring alignment with the government's needs.**

# MILCON Scheduling Specs

## Standard Schedule Specs

USACE: 01 32 01.00 10, **24 pages**

NAVFAC: 01 32 17.00 20, **30 pages**

What, When, How:

Activities, Relationships, Coding



# Risk

**Risk = when specs aren't tailored for project.**

**Government:** Review scheduling specs before solicitation.

**Contractor:** Ask questions during solicitation if needed.

Technical reviewers – few hours ahead of time versus  
damage control later.

# Example 1 – Initial Schedule

## Initial Schedule submission: 42 days

Submit the **Initial Project Schedule** for approval **within 42 calendar days after notice to proceed is issued.** The schedule must demonstrate a reasonable and realistic sequence of activities which represent all work through the entire contract performance period. **Include in the design-build schedule detailed design and permitting activities, including but not limited to identification of individual design packages, design submission, reviews and conferences; permit submissions and any required**

**Risk for Larger/Complex Projects: 1) Delayed Submissions, 2) Low Quality Submissions, 3) Schedule Rejections/Resubmittals**

## Example 2 – Data Date (Cut-Off Point)

- Consider resources for schedule update execution/reviews.
- Risk = all projects have data date end of month
- Can cause strain on schedule resources, risk quality

# Example 3 – Draft Schedule Review

- 2 days in standard scheduling specs
- May be ok for small/mid-size projects, may want full 3-4 days for larger projects
- Come prepared to Periodic Schedule Update Meeting
- No surprises at final submission à **decreased risk** of rejected schedule

# Rule of Thumb

Think back to past projects:

**What do you need more of, and what do you need less of?**

- What's been helpful, and what hasn't been helpful?
- Any conflicts over requirements that didn't add value?
- If only we had (or didn't have) X, it would have made the job easier.



# Have you had repeated issues?

Pain points, repeated issues.

Consider **addressing upfront** for clarity:

- Schedule Changes
- Fragnets with Proposals
- Time Impacts Incorporated into Schedules
- Cost Loading – Mobilization, Stored Materials

# Risk Strategy 2: Hold a Preconstruction Schedule Meeting



2024

JOINT ENGINEER  
TRAINING CONFERENCE  
& EXPO

[SAMEJETC.ORG](http://SAMEJETC.ORG)



[@PSAMENATIONAL](https://www.facebook.com/PSAMENATIONAL)



[@PSAME\\_NATIONAL](https://twitter.com/PSAME_NATIONAL) | [#SAMEJETC24](https://twitter.com/SAMEJETC24)



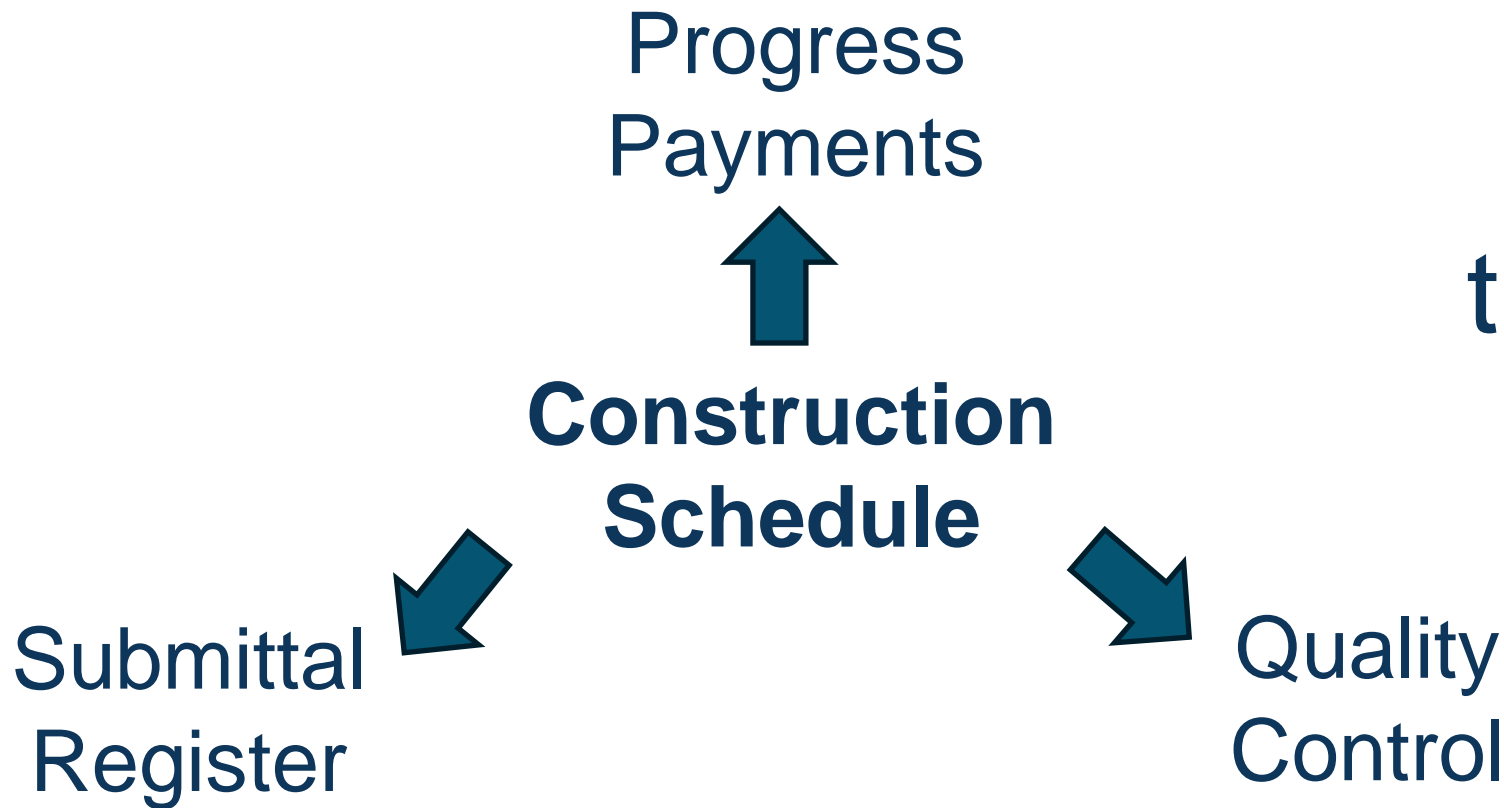
["SOCIETY OF AMERICAN MILITARY ENGINEERS"](https://www.linkedin.com/company/society-of-american-military-engineers)

## Risk Strategy 2:

Conduct a Preconstruction Schedule Meeting to:

**Align all involved parties on schedule expectations, processes, and clarify the schedule's relation to progress payments, quality control, and submittals.**

# Construction Admin - Schedule is Connected



**Risk = not on the same page**

# Progress Payments

Schedule Acceptance à Basis for Progress Payments

**Late/Rejected Schedules à Late/Rejected Progress Payments**

- **Flow and sequence?**
- Schedule update - deliverable to **agree on statuses?**
- Agreement in **field** or **during meeting?**

# Progress Payments

- **How many days** for draft review?
- **Expectations** for Periodic Schedule Update Meeting?
- Schedule's data date / **cut-off point**?

# Quality Control

- Definable Features of Work (DFOW) from Quality Control Plan à FOW coding & activities in the schedule
- **All DFOWs accounted for in the schedule:**
  - Confirm enough detail / no missing work
  - Backwards plan for preparatory (First Phase QC) meetings
  - Backwards plan for submittals

# Submittal Register

## DFOW à Schedule (as activity coding)

SUBMITTAL REGISTER (ER 415-1-10)						TITLE AND LOCATION:											
Activity No.	TRANSMITTAL No.	ITEM No.	SPEC PARAGRAPH No.	DESCRIPTION OF SUBMITTAL	TYPE OF SUBMITTAL	CLASSIFICATION	REVIEWER	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION		GOVERNMENT ACTION				
						FIO, GA, DA, CR, ORS	OFFICE / NAME	SUBMIT NEEDED BY	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	CORPS RECEIVED DATE	CODE	CORPS RETURNED DATE			

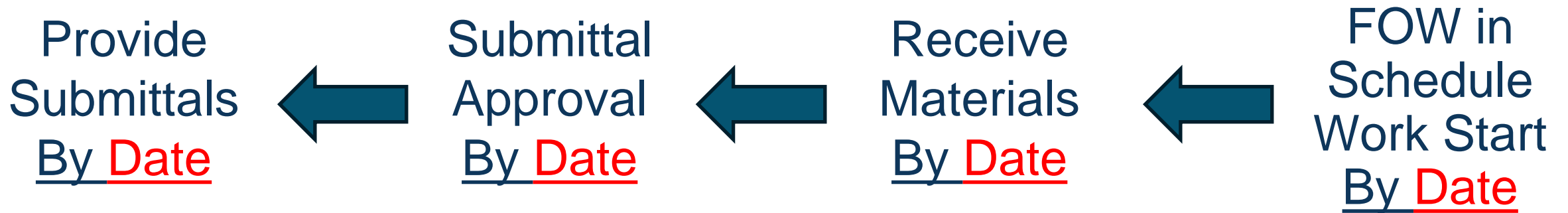
Manual updates,  
or  
Linking to the schedule?

CONTRACTOR SCHEDULE DATES		
SUBMIT NEEDED BY	APPROVAL NEEDED BY	MATERIAL NEEDED BY

Linking = Decreased Risk for Late/Overlooked Submittals for FOW



# Schedule/QC/Submittals Linking

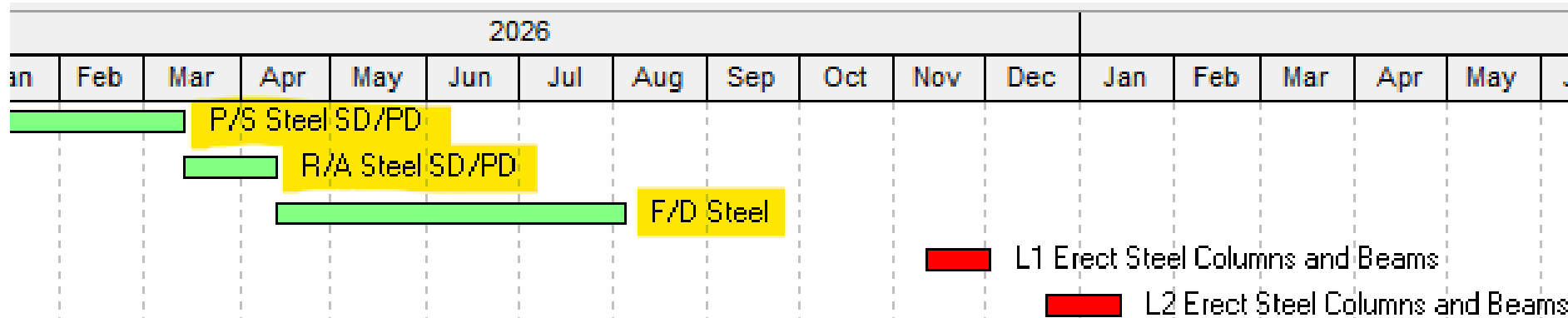


Schedule Linking in RMS = **Auto-populate, Auto-Update**

No Schedule Linking in RMS = **Manual Inputs** and Maintenance

# Long Lead Procurement in Schedule

- Typically **90+ days** in duration included in schedule



- What that looks like, costs
- Not duplicating submittal register

# Risk Strategy 3: Jointly Agree on Statuses to Minimize Resubmissions



2024

JOINT ENGINEER  
TRAINING CONFERENCE  
& EXPO

[SAMEJETC.ORG](http://SAMEJETC.ORG)



[@PSAMENATIONAL](https://www.facebook.com/PSAMENATIONAL)



[@PSAME\\_NATIONAL](https://twitter.com/PSAME_NATIONAL) | [#SAMEJETC24](https://twitter.com/SAMEJETC24)



["SOCIETY OF AMERICAN MILITARY ENGINEERS"](https://www.linkedin.com/company/society-of-american-military-engineers)

## Risk Strategy 3:

Gov/KTR agree on activity statuses prior to update.

Critical for schedule accuracy.

**Reduce the need for schedule revisions, resubmittals,  
and have reliable schedule documentation to resolve  
any potential time impacts.**

# Jointly Confirm Statuses

Raw data that's added into the schedule

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Physical % Complete	Actual Start	Actual Finish
<b>Envelope</b>							
<b>Exterior Skin Level 1</b>							
ENV-100	Frame Exterior Walls	5DW	15	0	100%	15-Jan-27	17-Feb-27
ENV-110	Sheathing	5DW	15	0	100%	28-Jan-27	26-Feb-27
ENV-120	Install Air Barrier	5DW	15	5	60%	08-Feb-27	
ENV-130	Install Brick	5DW	20	20	0%		
ENV-140	Install Windows	5DW	10	10	0%		
ENV-150	Install Main Entrance Doors	5DW	3	3	0%		

**More than just physical % complete!**

# Why this is Important - Risk

Determines not only payment, but **schedule output**.

- Projected start and finish dates
- Critical and near-critical paths
- Liability for Time Impacts

Statuses changes after-the-fact à can change the schedule's output **entirely**.

# Risk for Resolving Time Impacts

- If statuses not jointly reviewed and agreed upon at the time, they could change later without that verification.

	Actual Start			
	Sep-24	Oct-24	Nov-24	Dec-24
<b>Area A - Overhead Rough-Ins</b>	15-Sep-24		20-Jun-23	31-Jul-23

- **Can disrupt delay analysis, causing more gray areas**

# Actual Start and Finish Dates

## Actual Start and Finishes:

- QC/QA Daily Reports (spec)
- Photos
- Meeting minutes
- Submittal register
- Correspondence
- Inspection logs

Original Duration	Remaining Duration	Physical % Complete	Actual Start	Actual Finish
15	0	100%	15-Jan-27	17-Feb-27
15	0	100%	28-Jan-27	26-Feb-27
15	5	60%	08-Feb-27	
20	20	0%		
10	10	0%		
3	3	0%		



# Physical Percent Complete

## Correlates with Payment

Not duration complete, but physical complete.

Needs to be manually added, not by auto-calc.

Original Duration	Remaining Duration	Physical % Complete	Actual Start	Actual Finish
15	0	100%	5-Jan-27	17-Feb-27
15	0	100%	8-Jan-27	26-Feb-27
15	5	60%	8-Feb-27	
20	20	0%		
10	10	0%		
3	3	0%		

# Remaining Duration – Don't Overlook

Estimated days to complete the activity.

10 day activity, 50% complete, remaining duration=5 days.

Original Duration	Remaining Duration	Physical % Complete	Actual Start	Actual Finish
15	0	100%	15-Jan-27	17-Feb-27
15	0	100%	28-Jan-27	26-Feb-27
15	5	60%	08-Feb-27	
20	20	0%		
10	10	0%		
3	3	0%		

**Determines schedule's planned finish date.**

**Risk** – Can result in faulty output, dates, critical/near-critical paths, etc.

# Best Case (Least Risk) = Signed Status Sheet

Activity ID	Activity Name	Calendar	Original Duration	Remaining Duration	Physical % Complete	Actual Start	Actual Finish
<b>Envelope</b>							
<b>Exterior Skin Level 1</b>							
ENV-100	Frame Exterior Walls	5DW	15	0	100%	15-Jan-27	17-Feb-27
ENV-110	Sheathing	5DW	15	0	100%	28-Jan-27	26-Feb-27
ENV-120	Install Air Barrier	5DW	15	5	60%	08-Feb-27	
ENV-130	Install Brick	5DW	20	20	0%		
ENV-140	Install Windows	5DW	10	10	0%		
ENV-150	Install Main Entrance Doors	5DW	3	3	0%		

Result = accurate schedules, delays resolved quicker

# Jointly Review à Solid Data

**Jointly review** statuses prior to schedule update.

**Solid raw data** in the schedule

- à Accurate schedules
- à Resolve any time impacts quickly

**Recommendation: Jointly signed Status Sheet.**

# Risk Strategy 4: Leverage Draft Schedule Reviews



2024

JOINT ENGINEER  
TRAINING CONFERENCE  
& EXPO

[SAMEJETC.ORG](http://SAMEJETC.ORG)



[@SAMENATIONAL](https://www.facebook.com/SAMENATIONAL)



[@PSAME\\_NATIONAL](https://twitter.com/Psame_National) | [#SAMEJETC24](https://twitter.com/SAMEJETC24)



["SOCIETY OF AMERICAN MILITARY ENGINEERS"](https://www.linkedin.com/company/society-of-american-military-engineers)

## Risk Strategy 4:

Utilize draft schedule reviews to:

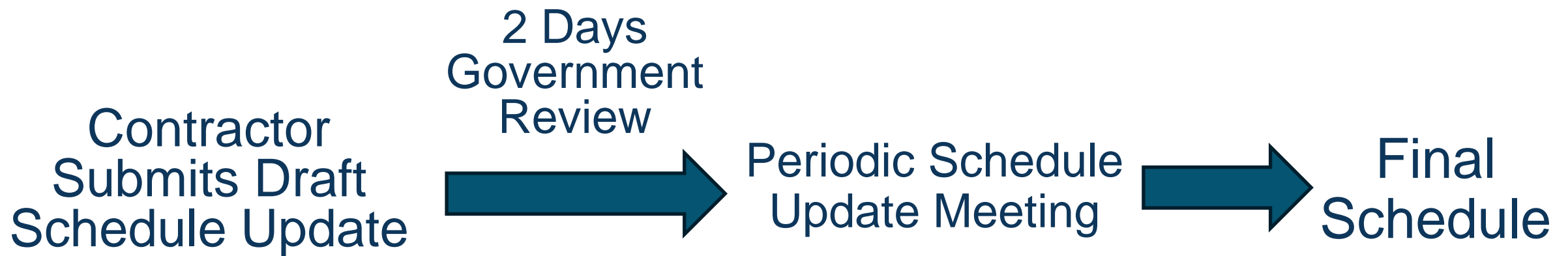
- Compile questions and comments for focused and productive Periodic Schedule Update Meeting

**Increase the likelihood of an acceptable formal schedule submission, reducing the risk for rejections, resubmittals, and delayed progress payments.**

# Draft Schedule Review

Update the Project Schedule on a regular basis, monthly at a minimum. Provide a draft Periodic Schedule Update for review at the schedule update meetings as prescribed in the paragraph PERIODIC SCHEDULE UPDATE MEETINGS. These updates will enable the Government to assess Contractor's progress. Update the schedule to include detailed construction activities

*USACE specifications*



# Take Advantage of This Draft Review

Come prepared to Periodic Schedule Update Meeting

- Note any comments
- Ask questions
- Overall status, changes, issues
- Discuss issues
- Make any changes for the final submission



# No Surprises

When draft review happens, **no surprises** for formal transmittal.

- Already reviewed draft, discussed, know what to expect
- Helps facilitate schedule review and acceptance faster than if seen for the first time
- Not only decreases risk of schedule rejections, also helps foster mutual understanding

# Draft Review Guidance

- Overall Status
- Reason for Change in Completion Date
- Critical Path Changes
- Near-Critical Paths
- Schedule Changes
- Top 3, 5, or 10 Most Important Items

# Risk Strategy 5: Look Beyond the Critical Path



2024

JOINT ENGINEER  
TRAINING CONFERENCE  
& EXPO

[SAMEJETC.ORG](http://SAMEJETC.ORG)



[@PSAMENATIONAL](https://www.facebook.com/PSAMENATIONAL)



[@PSAME\\_NATIONAL](https://twitter.com/PSAME_NATIONAL) | [#SAMEJETC24](https://twitter.com/SAMEJETC24)



["SOCIETY OF AMERICAN MILITARY ENGINEERS"](https://www.linkedin.com/company/society-of-american-military-engineers)

## Risk Strategy 5:

Look not only critical path, but also near-critical paths.

**Leverage your schedule's float paths to help your team prioritize their efforts and focus for the greatest maximum return.**

# Look Beyond the Critical Path

Can **appear out of nowhere** if not being tracked.

Critical path changes frequently.

Top critical, then next, next, and so on.

**If everything is critical, nothing is critical.**

# Prioritize Top 3, Top 5, Top 10

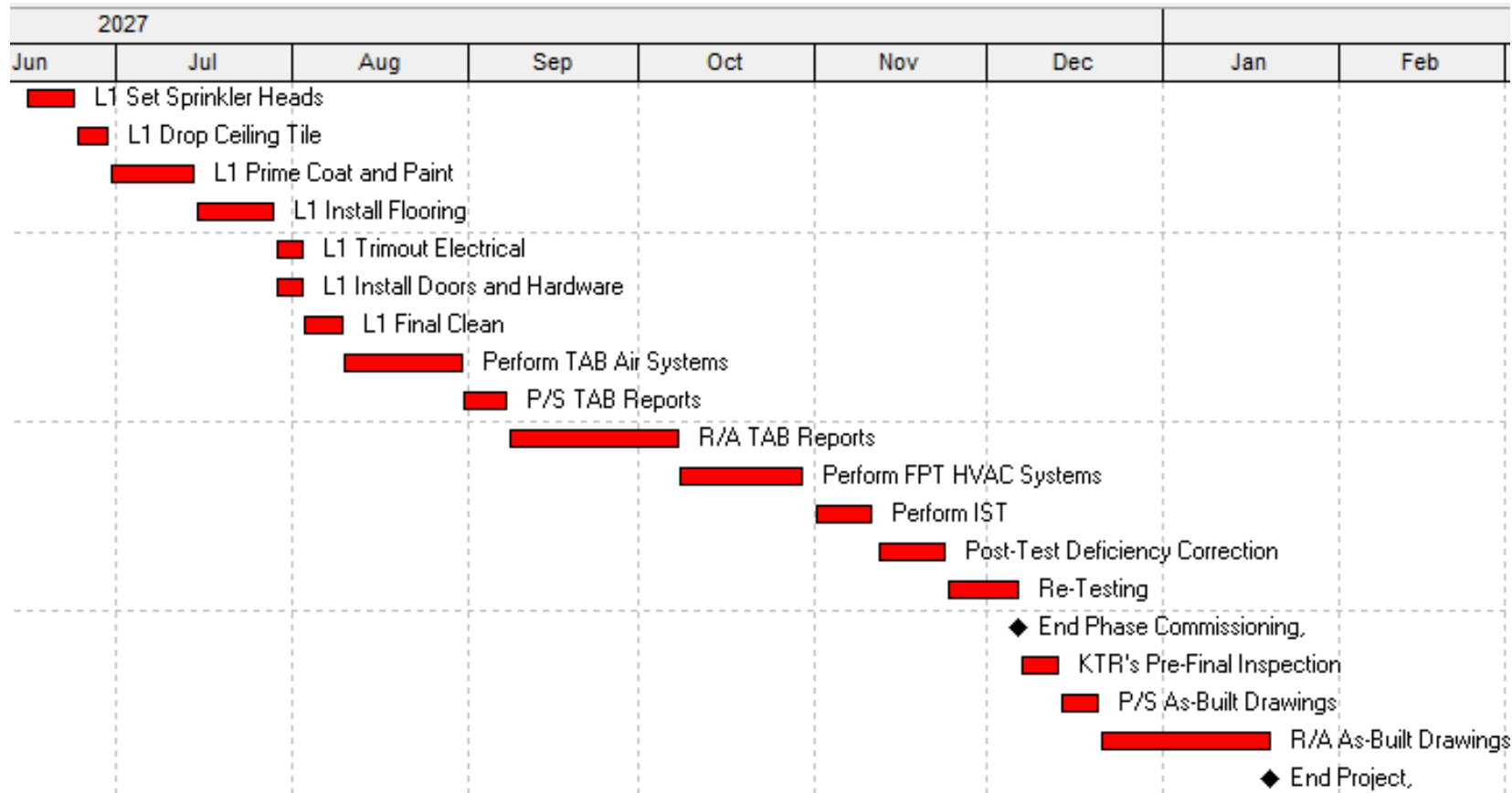
By looking at near-critical paths:

- See not only what's critical, but what's right behind
- Second most critical, third most critical, and so on

**Create a Prioritized List à Best Return Time/Efforts**

**Powerful Risk Mitigation Tool**

# Critical Path



Tells you how long a project is going to take.

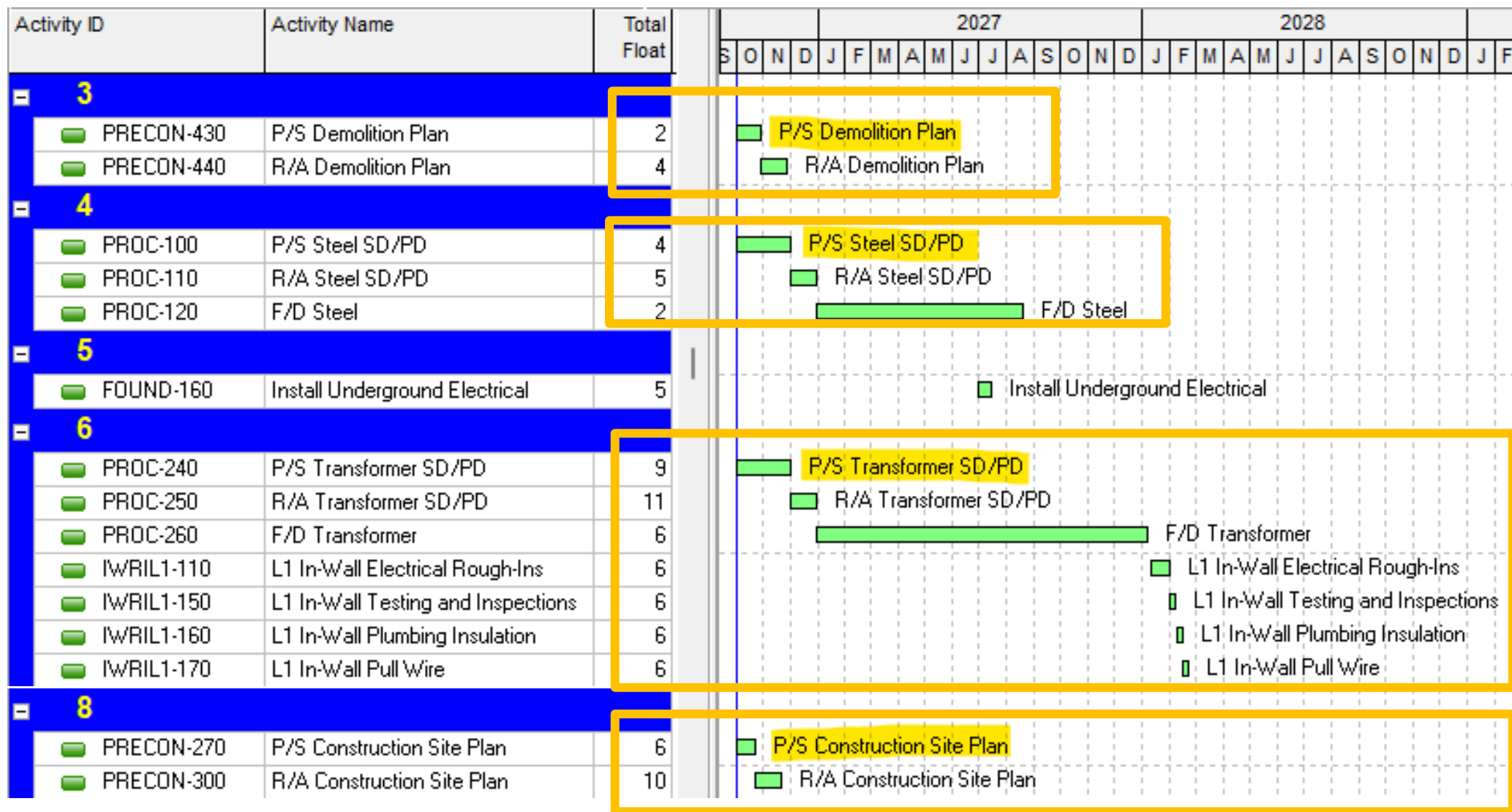
# Top (Critical Priority)

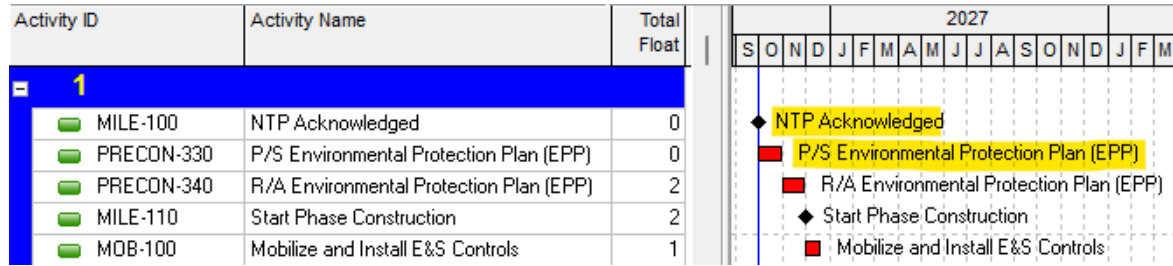
Activity ID	Activity Name	Total Float	2027																	
			S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
<div style="background-color: blue; color: white; padding: 5px;"> <span style="font-size: 24px; font-weight: bold; color: yellow;">1</span> </div>																				
MILE-100	NTP Acknowledged	0																		
PRECON-330	P/S Environmental Protection Plan (EPP)	0																		
PRECON-340	R/A Environmental Protection Plan (EPP)	2																		
MILE-110	Start Phase Construction	2																		
MOB-100	Mobilize and Install E&S Controls	1																		





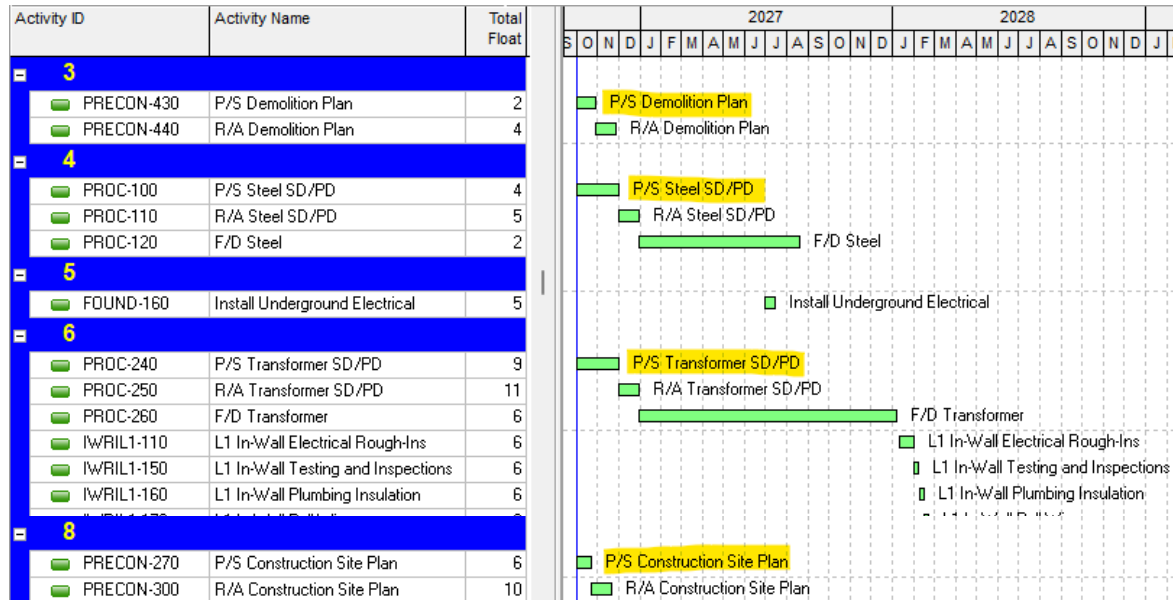
# Near-Critical Paths





# Top Risk / Priorities:

**Priority 1: Environmental Protection Plan**



**Priority 2: Demolition Plan**

**Priority 3: Steel Shop Drawings**

**Priority 4: Transformer Shop Drawings**

**Priority 5: Construction Site Plan**

# Float and Risk

Both parties can **take float** from the project,  
and both parties can **give float** to the project.

Prioritized List à Give Float Back à  
Decreased Risk

# Downloadable Tools



2024

JOINT ENGINEER  
TRAINING CONFERENCE  
& EXPO

[SAMEJETC.ORG](http://SAMEJETC.ORG)



[@PSAMENATIONAL](https://www.facebook.com/PSAMENATIONAL)



[@PSAME\\_NATIONAL](https://twitter.com/PSAME_NATIONAL) | [#SAMEJETC24](https://twitter.com/SAMEJETC24)

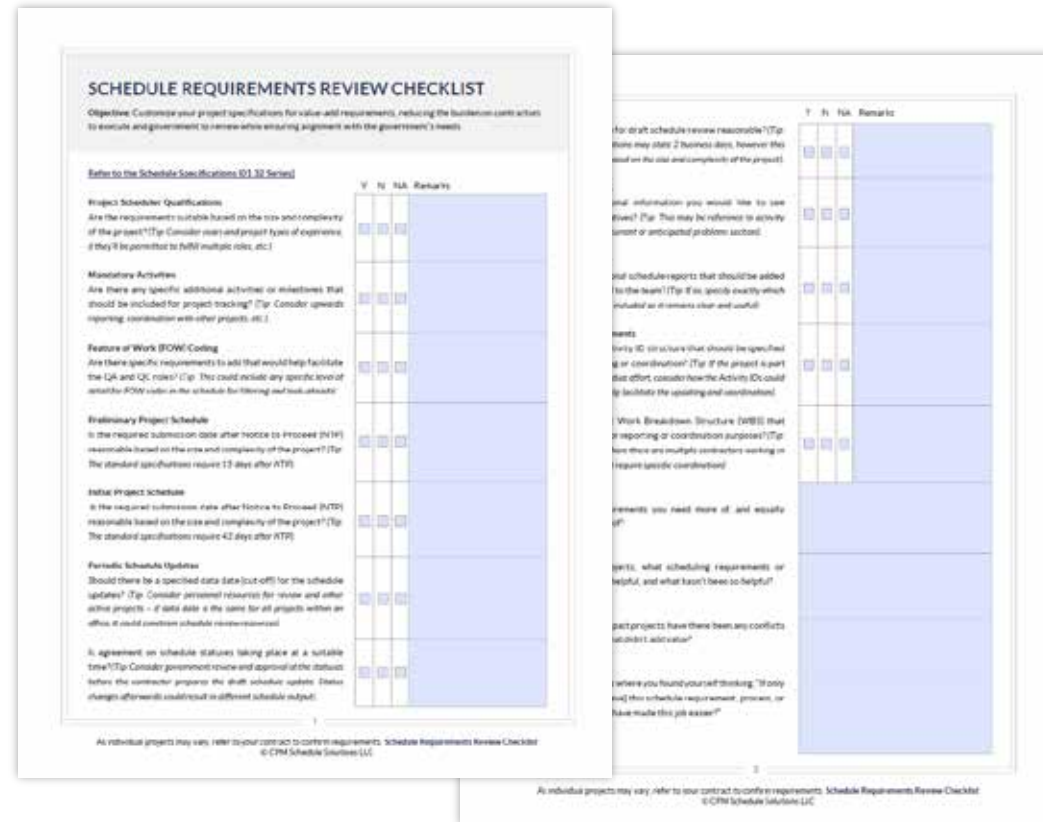


["SOCIETY OF AMERICAN MILITARY ENGINEERS"](https://www.linkedin.com/company/society-of-american-military-engineers)

# Risk Strategy 1 – Downloadable Tool

## Value-Add Schedule Requirements

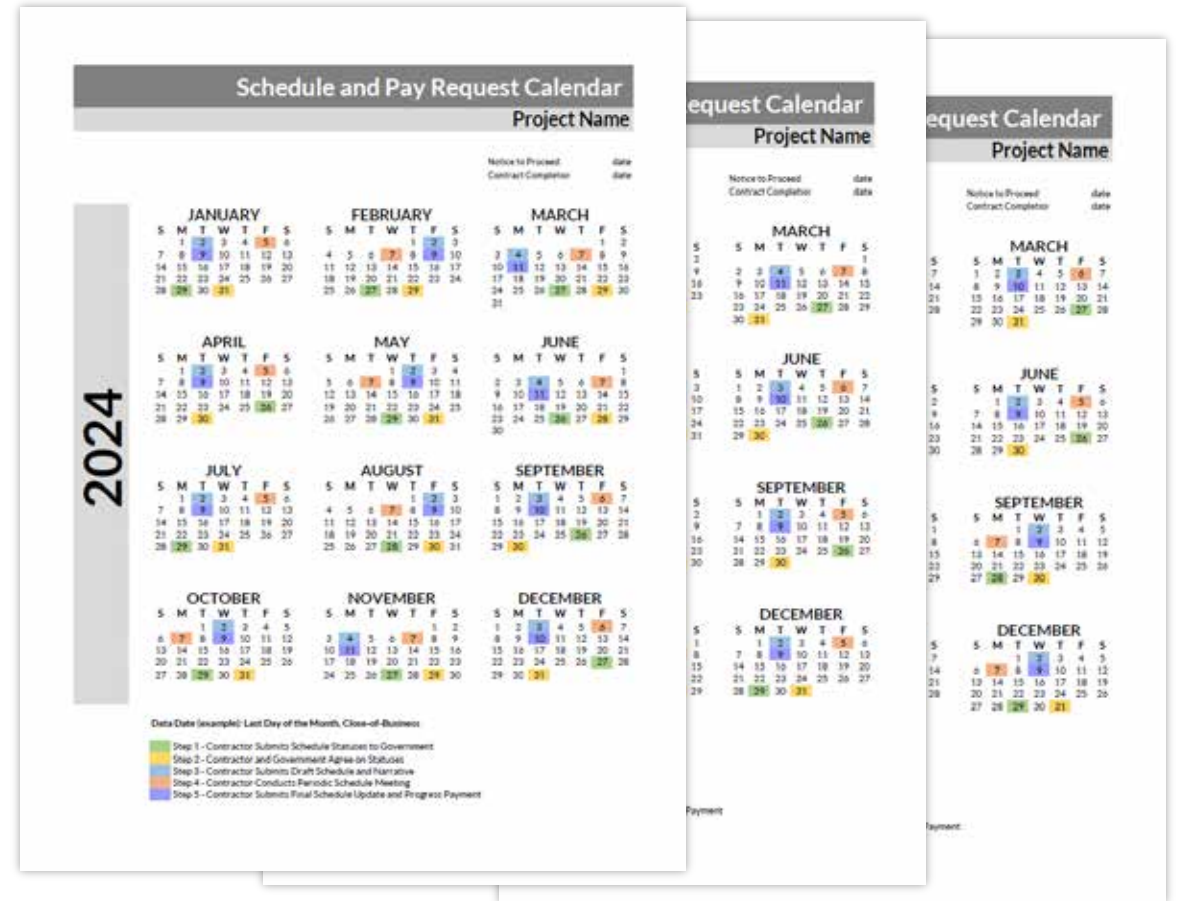
## Schedule Requirements Review Checklist



# Risk Strategy 2 – Downloadable Tool

## Schedule Preconstruction Meeting

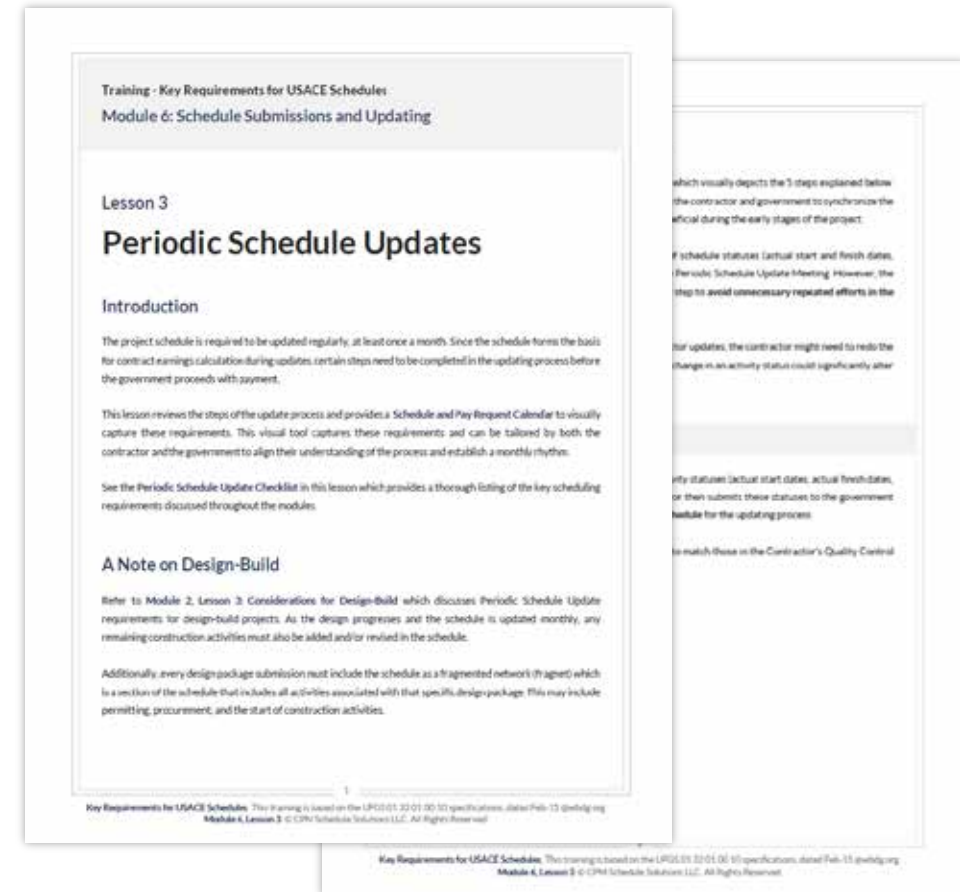
## Schedule and Pay Request Calendar



# Risk Strategy 3 – Downloadable Tool

## Jointly Agree on Statuses

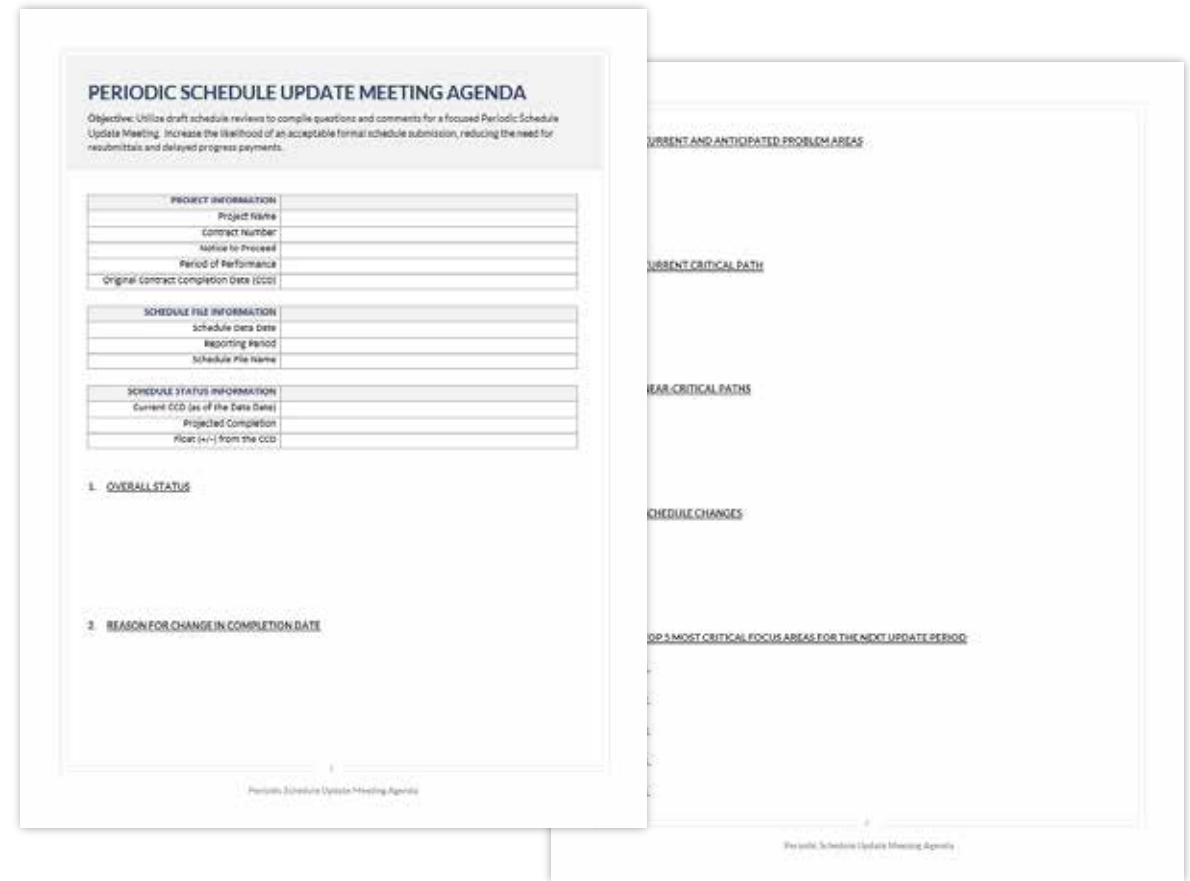
## Lesson PDF with Additional Statusing Information, Tips, and Examples



# Risk Strategy 4 – Downloadable Tool

**Draft Schedule Reviews**

**Periodic Schedule Update Meeting Agenda**



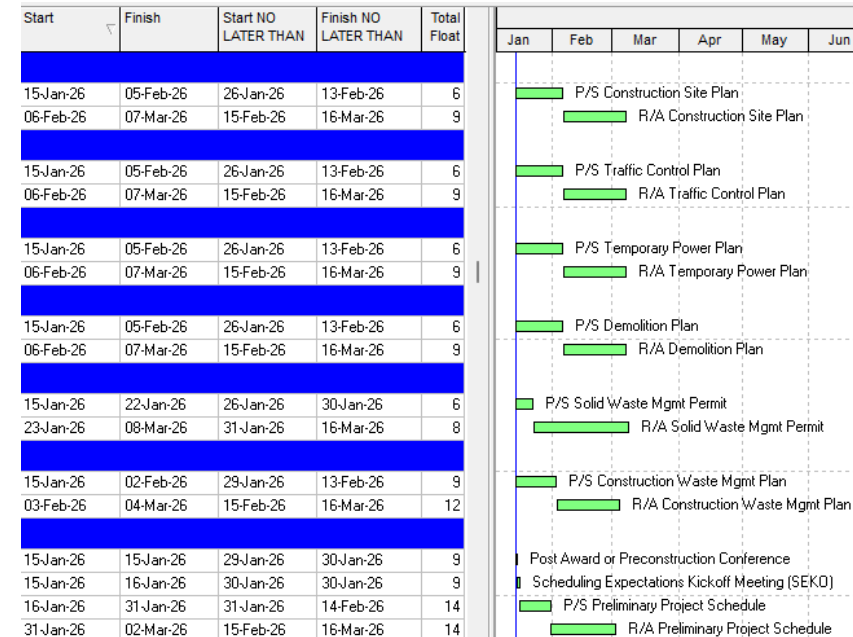


# Risk Strategy 5 – Downloadable Tool

## Look Beyond the Critical Path

### P6 Schedule Layout Files:

- Critical Path
- Near-Critical Float Paths



Includes “Needed No Later Than” Columns

# Where to Find

[www.cpm-ss.com/jetc2024-risk](http://www.cpm-ss.com/jetc2024-risk)

[diane.bragoni@cpm-ss.com](mailto:diane.bragoni@cpm-ss.com)

# THANK YOU

Please take a few minutes to complete a short survey about this session. Your feedback will help us improve future programming for JETC.

 **conferences** i/o



or browse to  
[jetc.cnf.io](https://jetc.cnf.io)

# Q&A

- Diane Bragoni, [diane.bragoni@cpm-ss.com](mailto:diane.bragoni@cpm-ss.com)
- Cindy Lincicome, [cindy@tliconstruction.net](mailto:cindy@tliconstruction.net)