



# How to do More With Less


Todd Grossweiler  
Eric Spaeth  
Dorin Nicorici  
Phillip Matthews

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- Attend 90% of this presentation
- Fill out the online evaluation for this session



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## Speakers



**Todd Grossweiler**  
Executive Vice President  
Allison-Smith Company



**Dorin Nicorici**  
President & CEO  
Dynalectric Oregon / Arizona



**Phillip Matthews**  
Director, Construction Services  
O'Connell Electric Company



**Eric Spaeth**  
Director of Preconstruction  
The Brandt Companies

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# Planning

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# The 3 Ps – Planning, Prefab, & Production

- Planning – Doing More with Less Starts with Planning.
  - The 7 Ps: "Proper Planning & Preparation Prevents Piss Poor Performance" (British Army adage)
  - "An hour of planning can save you 10 hours of doing." - Dale Carnegie
  - "Plans are worthless, but planning is everything." - Dwight D. Eisenhower
- Prefab – Improved Safety, Quality, & Production
- Production – We will not stay in business if we do not produce. We will not stay in business **long** if we do not have safety and quality at the foundation of how we produce.

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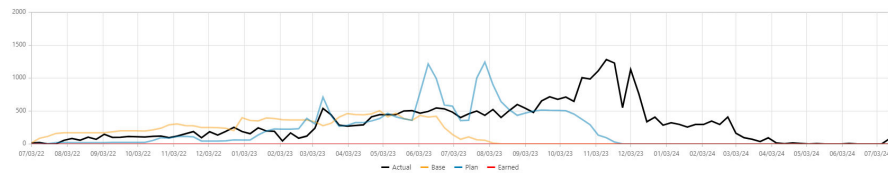
# Planning

- Early Involvement work
  - Push for complete Specs at Design Development Level
- Mutually Agreeable Schedule with Customer
  - Incorporate your Work Package Durations
- Establish Standards (Don't Re-invent every project)
- Avoid the "bubble" at the end by pulling more work forward

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# Planning



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# Planning

| Modeling               |            | Coordination |              | Shop Dwg      |             | A/E Review     |           | Fabrication |             | Construction Schedule |                   | Install |         |         |        |     |
|------------------------|------------|--------------|--------------|---------------|-------------|----------------|-----------|-------------|-------------|-----------------------|-------------------|---------|---------|---------|--------|-----|
| Scope                  | Level      | Area         | Design Ready | Coord. Starts | Coord. Days | Coord. Signoff | 1&D Issue | A/E Return  | Fab. to BIM | First Fab. Delivery   | BIM Sign-off Date | Install |         |         |        |     |
| UNDERGROUND            | Underfloor | ALL          | 11/30/2020   | 1/5/21        | Tue         | 10             | 1/19/21   | Tue         | 5           | 1/26/21               | 10                | 2/23/21 | 3/11/21 | Yes     |        |     |
| A/G WORK / HOME RUNS   | 1          | ALL          | 3/30/2021    | 4/6/21        | Tue         | 20             | 5/4/21    | Tue         | 5           | 5/11/21               | 10                | 5/25/21 | 15      | 6/15/21 | 8/9/21 | Yes |
| A/G WORK / HOME RUNS   | 2          | ALL          | 5/4/2021     | 5/4/21        | Tue         | 20             | 6/1/21    | Tue         | 5           | 6/8/21                | 10                | 6/22/21 | 15      | 7/13/21 | No     |     |
| A/G WORK / HOME RUNS   | 3          | ALL          | 5/4/2021     | 6/1/21        | Tue         | 20             | 6/29/21   | Tue         | 5           | 7/6/21                | 10                | 7/20/21 | 15      | 8/10/21 | No     |     |
| A/G WORK / HOME RUNS   | 4          | ALL          | 5/4/2021     | 6/29/21       | Tue         | 20             | 7/27/21   | Tue         | 5           | 8/3/21                | 10                | 8/17/21 | 15      | 9/7/21  | No     |     |
| FRESH AIR INTAKE/VENTS | Roof       | ALL          | 5/4/2021     | 7/27/21       | Tue         | 5              | 8/3/21    | Tue         | 5           | 8/10/21               | 10                | 8/24/21 | 15      | 9/14/21 | No     |     |

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# Decision Making: Buy Vs Build

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# Buy Vs Build Measured Miles – Participation is Key

- Buying can be from your prefab shop as well as a vendor.
- Have the field participate in measured miles.
- The field should help prove if buying is better than building in the field.
- If building is better than buying – acknowledge it.
- Know your limitations and be honest about them.
- Key items that can be bought instead of built in the field:
  - Wire Spooling
  - In Wall Rough
  - Duct Bank Spacers
  - Conduit Racks
  - Temporary Power

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## PLAN THE WORK - 1

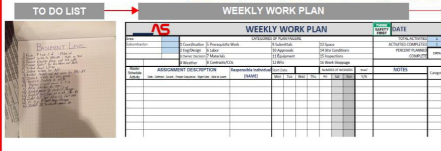


Here's a look at some of the planning components that are sequenced in a way to cut down on most or all the wasted motion for the installer (wireman).

The work involved on the front end (planning, staging, detailed layout) will yield success in eliminating foot travel, as well as a better chance of staying on or ahead of schedule and planning your labor needs.

As you walk the job, go through the drawings, and attend job meetings, maintain an itemized TO-DO list of near-term projects. This is a good first step in the planning process.

Use information from the itemized TO-DO list to fill out the weekly work plan. The WWP is a great tool for assigning workers to tasks, projecting completion and setting up labor. The WWP also gives you an area to record constraints for each individual task. (You may use a different form or method than the WWP to achieve the same goal, the important thing is to use the right tool to plan properly).



In addition to the initial pre-fab plan, the WWP should be used for timing of the deliveries & adding more tasks to the pre-fab list.



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## PLAN THE WORK - 2

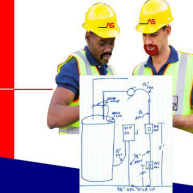


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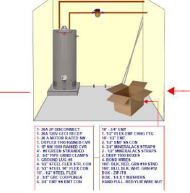
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During the actual layout to the wireman that will do the installation, there is nothing more impactful than a sketch to show what you expect. It's also better for clarification to create the sketch as part of the layout, so the task is basically done on paper while the wireman is looking on. Also include as part of the layout, the staged material and pre-fab units and your intentions for how it all goes together to complete the task.



Task staging is simply the act of staging the needed material in the room / area where the task is being performed. This will likely include pre-fab units, added parts (as shown below), conduit, wire, fixture, etc. This will require the foreman spending some time to put this together but will be far more efficient than the workers doing the gathering.



NEXT INFO DROP PLAN THE WORK - 3



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## PLAN THE WORK - 3

Here's a look at some of the planning components that are sequenced in a way that will cut down on most or all of the wasted motion for the installer (wireman).

The work involved on the front end (planning, staging, detailed layout) will yield success in eliminating foot travel, as well as a better chance of staying on or ahead of schedule and planning your labor needs.

AS TRADECRAFT  
INFO DROP # 342

Each step that you see has an individual, very detailed INFO-DROP

TO DO LIST  
INFO DROP #106

WEEKLY WORK PLAN  
INFO DROP #103

PRE-FAB  
INFO DROP #124 - #131

LAYOUT / SKETCH  
INFO DROP #113

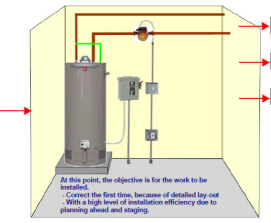
TASK STAGING  
INFO DROP #117

INSTALL LABELS  
INFO DROP #183

CHECK WORK FOR COMPLETION  
INFO DROP #118

MAKE SURE THE AREA IS CLEAN  
INFO DROP #156

**\* Mark it COMPLETE on the TO DO list.**



At this point, the objective is for the work to be installed.  
Correct the line flow, because of detailed lay-out  
With a high level of installation efficiency due to planning ahead and staging.

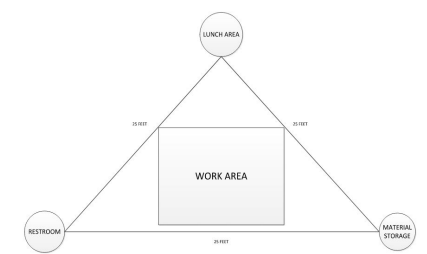
AS  
Allison - Smith Company  
Electrical Contractors & Engineers

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## Planning – Site Logistics

SITE LOGISTICS LAYOUT TRIANGLE – IDEAL SETUP



The ideal storage site is one that is organized so materials are moved once on the project site – from the storage location to the place of installation.

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## Planning – Site Logistics

**Dynaletric**  
An ENRCON Company

Project Name: \_\_\_\_\_

Project Number: \_\_\_\_\_

PM: \_\_\_\_\_

Field Supervisor: \_\_\_\_\_

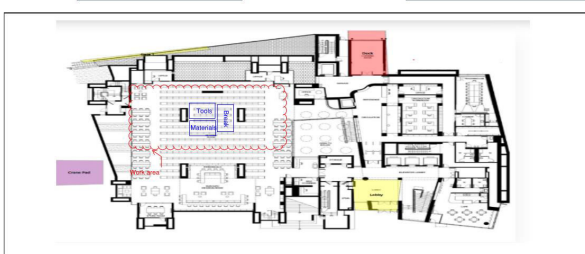
Location: \_\_\_\_\_

Estimated Crew Size: \_\_\_\_\_

**PROJECT SPECIFIC LOGISTICS PLAN**

Insert a floor plan/site plan and identify the following:

|                                                              |  |
|--------------------------------------------------------------|--|
| Distance from tools to work:                                 |  |
| Distance from information (shop drawings, 3D Model) to work: |  |
| Distance from material to work:                              |  |
| Distance from restrooms to work:                             |  |
| Distance from break/lunch area to work:                      |  |



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## Planning – Site Logistics

**Dynaletric**  
An ENRCON Company

Project Number: \_\_\_\_\_

Project Name: \_\_\_\_\_

Location: \_\_\_\_\_

Project Manager: \_\_\_\_\_

**SITE LOGISTICS REVIEW CHECKLIST**

| Date Completed | ITEM                                                                                                                                          |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
|                | Review the site layout and identify placement of materials and facilities to maximize productivity.                                           |
|                | Identify site entry and exit points and plan possible vehicle circulation.                                                                    |
|                | Identify procedures for receiving materials and authorized personnel.                                                                         |
|                | Identify material storage locations.                                                                                                          |
|                | Determine and document equipment that will be needed to unload and move materials (cranes, fork lift, pallet jacks, etc.)                     |
|                | Evaluate material size, weight elevators, and cranes to determine whether they can support the size and weight of the material items.         |
|                | Determine and order special tools associated with material handling (low cutters, bar code readers, computers, etc.)                          |
|                | Establish a "receiving crew" that consists of laborers or apprentices who will unload trucks and move materials.                              |
|                | Assign a worker to be in charge of material handling, including inspection and inventory of delivered items.                                  |
|                | Establish standard procedures for receiving, tagging, handling, and storing materials and equipment on the jobsite or at an offsite location. |
|                | Establish delivery dates for all materials and develop a schedule of deliveries.                                                              |
|                | Evaluate purchasing options to ensure materials are ordered to promote efficient unloading, storage and installation.                         |
|                | Evaluate the benefits and costs of collaboration in terms of delivery, storage, handling and installation.                                    |

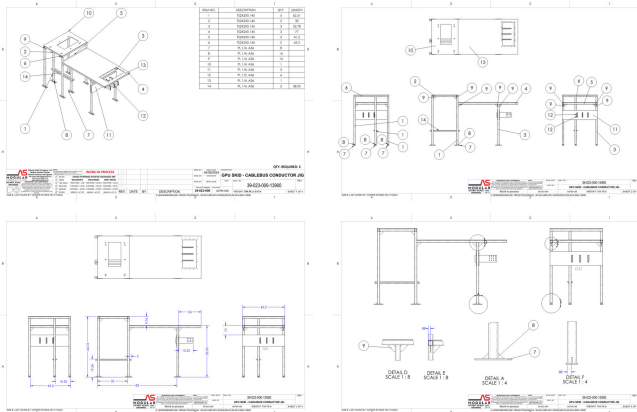
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## Planning to Prefab



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## Prefab



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## Production – "The Fruit of Your Labors"



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## Tech Adaptation



# Tech Adaptation



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# Tech Adaptation

**Office 365 Products**

| Application   | Category                  | Who                                                                               | Level of Priority | Training | Status        | EMCOR Approved? | Cost | Comments                                                                                                                                 |
|---------------|---------------------------|-----------------------------------------------------------------------------------|-------------------|----------|---------------|-----------------|------|------------------------------------------------------------------------------------------------------------------------------------------|
| Access        | Analytics                 | Admin<br>Accounting<br>Payroll<br>Contracts<br>Marketing<br>HR<br>BD              | 4                 |          | Included      | ✓               |      | Installed by default                                                                                                                     |
| Azure         | Business                  | Marketing<br>Prefab<br>VC<br>SD                                                   | 4                 |          | Not included  | ✓               |      | Cloud Computing tools for Application and server deployment. This is something that would REPLACE services offered by EMCOR at ECHO West |
| Bookings      | Scheduling                | Customer                                                                          | 4                 |          | Not included  | ✓               |      | Can be requested - FINDTIME is being renewed and may have similar capabilities                                                           |
| Calendar      | Scheduling                | Everyone                                                                          | 2                 |          | Included      | ✓               |      |                                                                                                                                          |
| Delve         | Storage                   | Everyone                                                                          | 2                 | Yes      | Included      | ✓               |      |                                                                                                                                          |
| Excel         | Analytics                 | Everyone                                                                          | 2                 |          | Included      | ✓               |      |                                                                                                                                          |
| Exchange      | Storage                   | IT                                                                                | 4                 |          | Back Office   | ✓               |      | In use - Back end Mail server for Outlook                                                                                                |
| Forms         | Analytics                 | Marketing                                                                         | 2                 |          | Not available | ✓               |      | Available 1/31/2019                                                                                                                      |
| Katana        | Communication             | HR                                                                                | 4                 |          | Included      | ✓               |      |                                                                                                                                          |
| MyAnalytics   | Analytics                 | Everyone                                                                          | 2                 |          | Included      | ✓               |      |                                                                                                                                          |
| OneDrive      | Storage                   | Everyone                                                                          | 1                 | Yes      | Included      | ✓               |      |                                                                                                                                          |
| OneNote       | Notes                     | Everyone                                                                          | 1                 | Yes      | Included      | ✓               |      |                                                                                                                                          |
| Outlook       | Business                  | Everyone                                                                          | 1                 | Yes      | Included      | ✓               |      |                                                                                                                                          |
| People        | Storage                   | Everyone                                                                          | 1                 |          | Included      | ✓               |      |                                                                                                                                          |
| Planner       | Task & Project Management | Everyone                                                                          | 2                 |          | Included      | ✓               |      |                                                                                                                                          |
| PowerAutomate | Business                  | Admin<br>Payroll<br>Accounting<br>Contracts<br>Marketing<br>PMs<br>HR<br>BD<br>IT | 2                 |          | Included      | ✓               |      |                                                                                                                                          |

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# Tech Adaptation

**OFFICE** [HOME] [OFFICE] [FIELD] [INDEX]

- Contracts
- Marketing
- Research & Development
- Estimating
- Prefab
- Safety
- Field Services
- Project Management
- Training
- Finance
- Purchasing
- Virtual Construction
- HR
- QA/QC
- Warehouse

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# Tech Adaptation

**Research & Development**

- AutoCAD
- Microsoft Excel
- Microsoft Teams
- Bluebeam
- Microsoft Outlook
- Microsoft Word
- EIO Board
- Microsoft Power Apps
- Revit
- Fastlane
- Microsoft Power Automate
- Rhumbix
- Fusion 360
- Microsoft Power BI
- Smartsheet
- Google Chrome
- Microsoft PowerPoint
- Solidworks
- Hilti On Track
- Microsoft SharePoint
- Zoom
- Lucidchart

← Return to Office Departments

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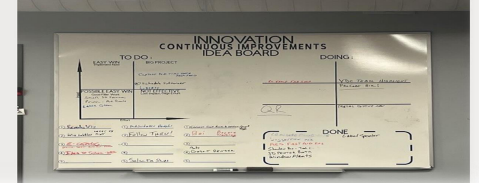
## Fostering Innovation



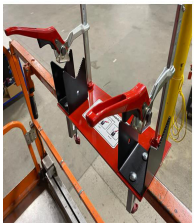
### Innovation

You must encourage your team to bring innovative ideas to the table!

Be prepared to prove the changes you made actually save money.



## Innovation and Creativity



T-Cart Clamps... on a Scissor Lift

**Purpose:** Add threaded clamps to the bottom and attach your T-Cart Clamp to the top rail of a scissor lift. A safety lanyard secures the clamp to the top rail as a backup and a standalone material support is provided to add further support down the length of the rail for longer materials.

**Innovator(s):** This flexibility was discussed when the T-Cart Clamp idea was first had by our Safety Department.



Locknut Sockets

**Purpose:** Available in 1/2", 3/4", 1", 2", 3", and 4" sizes, these custom sockets mount on 3/8" ratchets and allow locknuts to be installed where panels lips make spanners or flatheads difficult to access. Some find these especially useful when installing sealing locknuts. These sockets are being 3D printed and won't last forever but that's expected. Use them, wear them out, and we'll run more for you.

**Innovator(s):** Brian Burrough shared the need for a socket for installing Locknuts while working in Prefab.



## Innovation and Creativity

- Make Innovation a full-time job
- Tools and Technology
- Engage the front-line team in the innovation process.
- External partnership.
- Look for small wins and share with your team.
- Embrace failure
- Challenge status quo



## Value The Feedback Received

- Suggestions on how to receive feedback:
  - Setup a digital suggestion box
  - Visit job sites, attend divisional meetings.
  - Always ask for feedback.
- Importance of feedback:
  - Helps to keep your finger on the pulse of the work force.
  - Issues with a product may be resolved instead of compounding.
  - Build trust...

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## Questions



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